DOCUMENT RESUME

ED 293 286 EC 202 485

AUTHOR Gittman, Betty
TITLE Model Program to Mainstream Preschool Hearing Impaired Children Ages 2-5 in a Variety of Integrated Settings. Project CHIME: Year 3 and Final Report, July 1, 1984 to June 30, 1987.
INSTITUTION Illinois Univ., Urbana. Dept. of Architecture.
PUB DATE Jun 87
GRANT G008401386
NOTE 55p.
PUB TYPE Reports - Descriptive (141)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Demonstration Programs; Emotional Adjustment; *Handicap Identification; *Hearing Impairments; *Inservice Education; Language Acquisition; Listening Comprehension; *Mainstreaming; *Media Adaptation; *Parent Education; Preschool Education; Social Adjustment
IDENTIFIERS Project CHIME; *Screening Programs

ABSTRACT

Project CHIME developed and implemented strategies to promote effective mainstreaming of preschool hearing-impaired children, ages 2-5, by establishing a model demonstration program that provided, over a 3-year period, 20 hearing-impaired children with mainstreamed learning experiences in a variety of integrated settings through neighborhood nursery schools and day care centers. Preschool curriculum materials were adapted for use with the mainstreamed hearing-impaired children and a training program was developed for staff in participating schools and centers. An extensive parent education program for parents of both hearing-impaired and nonhandicapped participants was also provided. In evaluations conducted at the end of the program, the hearing-impaired preschoolers demonstrated increased ability to function and learn in a group setting and had made gains in social-emotional adjustment, auditory language comprehension, and language development. Project CHIME also implemented a comprehensive screening and monitoring system to ensure early identification of potential hearing problems and provide appropriate referrals. More than 2000 preschool children were screened in a total of 54 participating mainstream preschool and day care sites. Appendices provide descriptive case studies and statistical evaluation data. (VW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED293286

Board of Cooperative Educational Services of Nassau County
Salisbury Center
Valentines Road and The Plain Road
Westbury, New York 11590

Year 3 and Final Report

MODEL PROGRAM TO MAINSTREAM PRESCHOOL HEARING IMPAIRED CHILDREN AGES 2-5 IN A VARIETY OF INTEGRATED SETTINGS

Project CHIME

Grant Number: G008401386

Project Number: 024BH50038A

July 1, 1984 to June 30, 1987

Evaluation Report prepared by
Betty Gittman, Ph.D.
Office of Institutional Planning and Research

Project Coordinator
James Elliott
Program for the Hearing Impaired
Division of Special Education

Reviewed By
Georgene McKernan
Assistant Coordinator
Division of Special Education

Submitted by
Dr. Henry V. Colella
Assistant Superintendent
Division of Special Education

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Betty Gittman

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Titles of Project Reports

Project Brochures
Parent Handbook
Curriculum
Replication Guide
Project CHIME Year 1 Report
Project CHIME Year 2 Report
Project CHIME Year 3 and Final Report

EC 202485

BEST COPY AVAILABLE

Executive Summary: Project CHIME

MODEL PROGRAM TO MAINSTREAM PRESCHOOL HEARING IMPAIRED CHILDREN AGES 2-5 IN A VARIETY OF INTEGRATED SETTINGS

Project CHIME developed and implemented strategies to promote effective mainstreaming of preschool hearing impaired children ages 2-5. The project established a model demonstration program involving neighborhood nursery schools and day care centers to provide preschool hearing impaired children with mainstreamed learning experiences in a variety of integrated settings. Mainstreamed preschool experiences were utilized as a transition training environment for enhancement of readiness or mainstreaming into regular kindergarten.

The project achieved a variety of accomplishments as follows:

- Establishment of a model demonstration program involving neighborhood nursery schools/day care centers which provided preschool hearing impaired children, ages 2-5, with mainstreamed learning experiences in a variety of integrated settings.
- Adaptation of preschool curriculum materials for use with hearing impaired children who were mainstreamed into nursery schools and day care centers.
- Development and implementation of a training program for staff in participating nursery schools and day care centers.
- Provision of an extensive parent education program for parents of hearing impaired and nonhandicapped participants.
- Implementation of a comprehensive screening and monitoring system for infants and children in day care and nursery school settings in order to achieve early identification of potential hearing problems, and to provide appropriate assessment, and referral.
- Dissemination locally, statewide, and nationally of curriculum materials, teacher training program, replication guide, parent handbook, and project strategies for mainstreaming preschool hearing impaired children.

Over the three years of the project 20 preschool hearing impaired youngsters were served at one of five mainstream sites. The children attended a mainstream site up to three mornings per week; they attended the BOCES Hearing Impaired Preschool Program the remainder of each week. Baseline data collected on a variety of characteristics (including behavior, ability, social-emotional adjustment, visual motor integration, auditory language comprehension, and language development) indicated that there were no baseline differences between the 4-year old youngsters who were served during each year of the project implementation.

The project developed and field tested a comprehensive curriculum and supplementary teacher materials for use with hearing impaired children mainstreamed into nursery school settings. The project curriculum and supplementary teacher materials adapted existing strategies and methodology and modified specific, hands-on activities in order to meet the needs of children who have hearing impairments within a mainstreamed preschool program. Cognitive, expressive and receptive language, auditory, gross-motor, and fine motor approaches were incorporated into daily lessons presented over a 125-day period to present concepts and language to hearing impaired children.

The project developed and implemented a training program for staff in participating nursery schools and day care centers. Trained staff demonstrated heightened awareness of the needs of hearing impaired preschool children and of methodologies for teaching them in a mainstreamed setting; increased ability to identify potential hearing problems; and ability to implement adapted preschool curriculum materials. Positive teacher assessments of visits and of workshops were indicative of successful implementation of the staff training.

An extensive parent education program was provided. Participating parents demonstrated increased awareness of the needs of hearing impaired children and also more positive attitudes and expectations for their potential for achievement.

Comprehensive screening and monitoring for infants and children in day care and nursery school settings achieved early identification of potential hearing problems and provided appropriate referrals. Screenings of more than 2000 preschool children were conducted in a total of 54 participating mainstream preschool and day care sites.

Children with hearing impairments who participated in the project benefited through increased positive social interaction with non-handicapped peers. The preschoolers demonstrated increased ability to function and learn in a group setting. Assessment of the program participants indicated that gains were made in terms of their social-emotional adjustment, auditory language comprehension, and language development.

Key personnel for Project CHIME included a Project Director and a Project Coordinator, a teacher trainer (40% time), an audiologist (20% time), a psychologist, and a program evaluator. An Advisory Council consisted of 14 members who provided the project with input, advisement, and support. The full facilities, resources and capabilities of the Board of Cooperative Educational Services (BOCES) of Nassau County and of the Nassau BOCES Division of Special Education were available for the project's implementation and maintenance.

Table of Contents

	Page
Abstract	
A. Purpose and Objectives	1
B. Project Description	3
1. Mainstream Site	3
2. Participants	3
3. Baseline Data	5
C. Project Resources	5
1. Facilities	5
2. Personnel	6
3. Advisory Council	7
D. Project Results	7
1. Evaluation Plan	8
2. Model Demonstration	10
2.1 Social Interaction	10
2.2 Ability to Function and Learn In a Group Setting	12
2.3 Growth in Social/Emotional, Cognitive, Self-Help and Language Areas	14
3. Curriculum Materials	17
4. Staff Training	18
4.1 Teachers' Assessment of Workshops	18
4.2 Teachers' Assessments of Visits	19
5. Parent Education Program	19
5.1 Parents' Assessments of Workshops	20
5.2 Parent Attitudes	21
6. Screening and Monitoring	23
7. Dissemination	24
E. Summary and Conclusions	24

List of Tables

Table 1 Worksheet for Hearing Impaired Preschool Interaction 11
Table 2 Preschool Behavior Checklist Posttests 13
Table 3 Meadow-Kendall Social-Emotional Assessment Inventory Posttests 15
Table 4 Beery Development Test of Visual Motor Integration Posttests 15
Table 5 Test for Auditory Comprehension Posttests 16
Table 6 Ski-Hi Language Development Scale Posttests' 17
Table 7 Teachers' Ratings of Workshops 18
Table 8 Teachers' Ratings of Visits 19
Table 9 Parents' Assessments of Workshops 20
Table 10 Parents' Attitudes and Posttests 22

Appendix A Baseline Data
Table A.1 Preschool Behavior Checklist Pretests 27
Table A.2 McCarthy Scales of Children's Abilities Pretests 28
Table A.3 Meadow-Kendall Social-Emotional Assessment Inventory Pretests 28
Table A.4 Beery Developmental Tests of Visual Motor Integration 28
Table A.5 Test for Auditory Comprehension of Language Pretests 29
Table A.6 Ski-Hi Language Development Scale Pretests 29
Table A.7 Parents' Attitude Questionnaire Pretests 30

Appendix B Worksheet for Hearing Impaired Preschool Interaction and Appended Comments
Table B.1 Observed Activities (WHIPI) 31
Table B.2 Percentage of Observation for WHIPI Items 32
Table B.3 Number of Children Observed at Specific Activities 33

Appendix C Year 3 Pretests and Posttests
Table C.1 Preschool Behavior Checklist 41
Table C.2 Meadow-Kendall Socio-Emotional Assessment Inventory 42
Table C.3 Beery Developmental Test of Visual Motor Integration 42
Table C.4 Learning Accomplishment Profile 42
Table C.5 Test for Auditory Comprehension of Language 42
Table C.6 Parents' Attitude Questionnaire 43
Table C.7 Ski-Hi Language Development 43

List of Figures

Figure 1 Summary of Accomplishments 2
Figure 2 Evaluation Plan 8
Figure 3 Year 3 Preschool Screenings 23

List of Appendices

Appendix A Baseline Data
Appendix B Worksheet for Hearing Impaired Preschool Interaction (WHIPI) and appended comments
Appendix C Year 3 Pretests and Posttests
Appendix D Case Studies

Abstract

Project CHIME developed and implemented a demonstration model to promote effective mainstreaming of hearing impaired children, ages 2-5. The overall goals of the project were: 1) to develop a program to provide mainstreamed learning experiences for hearing impaired preschool children in a variety of integrated settings; 2) to utilize mainstreamed preschool experiences as a viable transition training environment to enhance readiness for mainstreaming into regular kindergarten if warranted; and 3) to establish a regional network of neighborhood nursery schools and provide staff training in order to improve the delivery of services to mainstreamed hearing impaired youngsters in preschool placements.

Hearing impaired children attended a mainstreamed program up to three mornings per week at a demonstration preschool site. The participating children attended the BOCES Hearing Impaired Preschool Program the remainder of each week. Length of time for placements varied according to each child's Individual Education Plan.

Project components were implemented under the direction and advisement of the Advisory Council, a specially created council including medical practicioners, agency providers of services, advocacy groups, and BOCES representatives who worked with the hearing impaired.

The project consisted of a variety of components. Preschool curriculum materials were developed, field-tested, and modified for use with hearing impaired children. Parents of participating children were involved in parent education classes and in a variety of on-site activities. Mainstream site staff were taught to use auditory trainers and were familiarized with the program philosophy and the use of hearing aids by children. The program provided ongoing technical assistance to project staff.

Monitoring of the project participants required extensive coordination between preschool sites and the BOCES Hearing Impaired Program. Linkages with neighborhood nursery schools, university programs for the hearing impaired, and public and private health facilities were expanded. Various dissemination strategies were implemented locally and statewide. A replication model was developed which included training sites and educational products. Assessment and evaluation activities involved continual assessment of children to determine the impact of mainstreamed experiences.

The 19 children who participated in Project CHIME made substantial progress in their development. Seventeen children entered a totally mainstreamed program. Two children who were too young to enter a kindergarten were carried-over in the mainstreamed preschool. It was expected that these youngsters would enter a totally mainstreamed program the following year.

A. Purpose and Objectives

Project CHIME developed and implemented strategies to promote effective mainstreaming of preschool hearing impaired children ages 2-5. The project developed a program providing mainstreamed learning experiences for hearing handicapped preschool children in a variety of integrated settings. Mainstreamed preschool experiences were utilized as a transition training environment for enhancement of readiness or mainstreaming into regular kindergarten when warranted by individual prescriptions. The project established a regional network of neighborhood nursery schools. Staff training was provided in order to improve the delivery of services to mainstreamed hearing impaired youngsters in preschool/day care placements.

Major project activities included:

- Development of criteria for selection of mainstream sites.
- Development of curriculum and supplementary teacher materials on methodologies and strategies for effective mainstreaming.
- Development/implementation of extensive training and technical assistance for teachers at mainstream sites.
- Development of criteria to determine readiness of hearing impaired preschoolers for placement in mainstream settings.
- Development/implementation of readiness and transition training activities for participating children.
- Ongoing assessment/evaluation of participating children and mainstream settings.
- Implementation of extensive parent education activities.

Project objectives were:

Objective 1: To establish a model demonstration program involving neighborhood nursery schools/day care centers to provide preschool hearing impaired children, ages 2-5, with mainstreamed learning experiences in a variety of integrated settings.

Objective 2: To adapt preschool curriculum materials for use with hearing impaired children mainstreamed into nursery schools and day care centers.

Objective 3: To develop and implement a training program for staff in participating nursery schools and day care centers.

Objective 4: To provide an extensive parent education program for parents of hearing impaired and nonhandicapped participants.

Objective 5: To provide a comprehensive screening and monitoring system for infants and children in day care and nursery school settings in order to achieve early identification of potential hearing problems, and to provide appropriate assessment, referral and follow-up.

Objective 6: To disseminate on a local, statewide and national basis the curriculum materials, teacher training program, and project strategies for mainstreaming preschool hearing impaired children.

Figure 1 briefly summarizes the project's accomplishments.

Figure 1. Summary of Accomplishments

Objective	Summary of Accomplishments
1. To establish a model demonstration program involving neighborhood nursery schools/ day care centers to provide preschool hearing impaired children, ages 2-5, with mainstreamed learning experiences.	Establishment of regional network linkages with nursery schools and day care centers in Nassau County. Identification of five mainstream sites for model program. Establishment of a coordination plan between the BOCES Hearing Impaired Preschool Program and mainstream sites. Identification of 30 model project participants. Collecting baseline data on project participants including scores on Preschool Behavior Checklist, McCarthy, Meadow Kendall, Beery, TAC, and Ski-HI. Development of an observation checklist. Implementation of a demonstration model including assessments of participants' development through comparison of pre/posttest scores.
2. To adapt preschool curriculum materials for use with hearing impaired children mainstreamed into nursery schools.	Development of a guide for adapting preschool curriculum materials. Development of a teacher manual: methodologies for mainstreaming hearing impaired children.
3. To develop and implement a training program for staff in participating nursery schools and day care centers.	Development of training materials for teachers. Orientation for participating staff. Training for site staff consisted of workshops attended by mainstream teachers and project staff. Development and implementation of a staff in-service program including use of auditory trainers.
4. To provide an extensive parent education program for parents of hearing impaired and nonhandicapped participants.	Development of training materials for parents. Orientation and training for participating parents. Satisfaction ratings of parents' workshops. Responses to questionnaires concerning parents' attitudes and expectations of their child and of his or her potential for achievements.
5. To provide a comprehensive screening and monitoring system for infants and children in day care and nursery school settings in order to achieve early identification of potential hearing problems, and to provide appropriate assessment, referral and follow-up.	Implementation of screening, identification, assessment and referral activities. 2,206 preschool-age children in Nassau County were screened for hearing loss at 54 preschool sites. Year 1: 848 children at 18 sites. Year 2: 655 children at 18 sites. Year 3: 703 children at 18 sites.
6. To disseminate on a local, statewide and national basis the curriculum materials, teacher training program and project strategies for mainstreaming preschools hearing impaired children.	Implementation of dissemination activities.

Other accomplishments included establishment of an Advisory Council and Council meetings, development of project questionnaires, development and dissemination of a project brochure, development and dissemination of a parent handbbook, implementation of evaluation activities, ongoing technical assistance to mainstream sites, and development and preparation of Year 1 and Year 2 evaluation reports and this Year 3 and Final Evaluation Report.

B. Project Description

1. Mainstream Sites

Linkages were created with nursery schools and day care centers in Nassau County through the development and distribution of project brochures, invitations to visit the project and to attend project presentations, publication and implementation of a comprehensive screening and monitoring system for infants and children, through regular BOCES outreach channels, and through development and dissemination of a replication guide.

The five sites which were selected for the model program mainstream sites included two private nursery schools, a cooperative nursery school, and a mother/child play group. Each of the selected sites fulfilled the following criteria:

- The school was state licensed.
- Teachers were state certified.
- Staff was willing to cooperate with project activities.
- Teacher/pupil ratio did not exceed 15:1.
- The school served children in the local community.
- The physical organization and acoustics of the classroom were conducive for the hearing impaired child.

The project established a coordination plan to facilitate articulation between the Hearing Impaired Preschool Program and the mainstream sites.

2. Participants

The identification of project participants was a highly selective process which attempted to focus upon youngsters who could reap maximum benefit from the mainstreaming program. In addition to requiring that the youngster be enrolled in a mainstream site which was conducive to project activity, parents' willingness to cooperate and to support project efforts was mandatory. It was required that project participants would not have serious physical disabilities, other than the identified hearing impairment. Prior to acceptance into the project, a positive assessment of each child's personal maturity and learning readiness was required.

This highly selective process, in combination with a decreasing preschool population in Nassau County and an inordinate number of preschool and day care programs which did not meet criteria for participation, accounted for the acceptance of a small number of participants into the demonstration model.

Eight model project participants were identified in Year 1, five in Year 2, and seven in Year 3. The mean age for Year 1 participants was 49.3 months, and 49.5 months for Year 2 participants. Year 3 participants consisted of two discrete age groups. Four children were four-years old, with an average age of 4 years 7 months; three children were two-years old, with an average age of 2.4 months.

Project participants included five boys and three girls in Year 1, three boys and two girls in Year 2, and three boys and four girls in Year 3.

Year 1 and Year 2 participants had no disabilities other than a hearing impairment. Two of the five Year 3 participants had slight visual impairments in addition to hearing impairments.

All the participants were from English-speaking households. Seven of the Year 1 children lived with both parents and a sibling; one child lived with one parent and no siblings. Four of the Year 2 children lived with both parents; one child lived with one parent. Five Year 3 children lived with both parents. One Year 3 child (a four-year old) lived with one parent.

The average age of hearing loss was 24 months for Year 1 participants, 18 months for Year 2 participants, and 15.8 months for Year 3 four-year old participants.

Three Year 1 participants had been diagnosed with hearing loss between birth and 8 months; one was diagnosed at 19 months, and four were diagnosed between the ages of 36-50 months. Two Year 2 participants had been diagnosed with hearing loss between 5-9 months; two between 18-19 months, and one at 39 months. Two Year 3 participants were diagnosed with hearing loss between birth-9 months; two between 10-19 months, and two between 20-35 months.

Hearing, measured by pure tone averages, ranged from 35-107+ for participants' left and right ears.

The average age at which Year 1 participants obtained a hearing aid was 32 months. One participant obtained a hearing aid at 11 months, four obtained their hearing aids between 20 and 36 months, and 3 obtained their aids between the ages of 43-50 months.

The average age at which Year 2 participants obtained a hearing aid was 21 months. Two obtained an aid between 10-11 months, two between 20-35 months, and one at 43 months.

The average age at which Year 3 participants obtained a hearing aid was 23.5 months for four-year olds, and 13 months for the two-year olds. One four-year old obtained an aid at 2 months, one at 14 months and two between 28-30 months. The two two-year olds obtained an aid at 11 months and at 19 months.

The eight Year 1 participants had entered preschool programs between December 1982 and July 1984. The five Year 2 participants had entered preschool programs between April 1984 and February 1985. The four four-year old Year 3 participants had entered preschool programs between December 1984 and July 1985. The children attended a mainstream site up to three mornings per week, and they attended the BOCES Hearing Impaired Preschool Program the remainder of each week.

The number of days for individual placements varied according to each child's Individual Education Plan. Year 1 children attended the preschool program for the hearing impaired between two and five days weekly for an average of 3.5 hours per day, and they spent between two and three days a week at mainstream sites for 3 hours each day. Year 2 children attended the preschool programs two to five days weekly for an average of four hours per day. They spent between two and three days a week at mainstream sites for an average of 3-1/2 hours per day. Year 3 children attended the preschool programs two to three days weekly for an average of 4.5 hours per day. They spent between two and three days a week at mainstream sites for an average of 3 hours per day.

3. Baseline Data

Baseline data was collected for all the project participants on a series of measures to assess a variety of behaviors, abilities, and skills. Assessment instruments were carefully selected in order to provide valid and objective assessment of the impact of mainstreamed experiences. The instruments which were used included:

- Preschool Behavior Checklist
- McCarthy Scales of Children's Abilities
- Meadow-Kendall Social Emotional Assessment Inventory
- Beery Developmental Test of Visual Motor Integration
- Test for Auditory Comprehension of Language
- Ski-Hi Language Development Scale

Analysis of pretest measures for Year 1, Year 2, and Year 3 participants found no significant differences between the groups, thus confirming the assumption that the samples were equivalent groups which were representative of the same population. (In the case of Year 3 particiants, only the data for 4-year olds was used for comparisons. The scores for the two 2-year olds were not compared.) Appendix A, Tables A.1 through A.7 presents the baseline data for Year 1, Year 2, and Year 3 project participants.

C. Project Resources

1. Facilities

The full facilities, resources and capabilities of the Board of Cooperative Educational Services (BOCES) of Nassau County and of the Nassau BOCES Division of Special Education were available for the implementation and maintenance of this project. Space was made available to the project through the Program for the Hearing Impaired at the Fayette School in Merrick, N.Y.

Ancillary support included specialized equipment, secretarial and computer services, and the Special Education Teacher Resource Center (SETRC) administrator and consultants. Ancillary support also included the services of the BOCES Preschool Supervisor, the Principals of the Elementary Programs, and the Information Specialist who participated in the development of all materials.

Nassau BOCES maintains a resource library, the Nassau Educational Resource Center (NERC), which offered access to current research on subjects including early childhood, assessment techniques, and parent education. The library subscribes to various journals in the field of regular and special education, and obtains numerous monographs and educational documents.

2. Personnel

Key personnel for the project included a Project Director and a Project Coordinator. Maureen Metakes, the Nassau BOCES Executive Administrator for Special Education, served as the Project Director (20% time). James Elliott served as the Project Coordinator.

The Project Director was responsible for overall planning, specifying and meeting objectives, reporting to state and federal agencies, maintaining liaison, participating in state, local and national meetings, and directing major dissemination activities.

The Project Coordinator was responsible for overall project management, overseeing curriculum and materials development, maintaining liaison with cooperating mainstream sites, coordinating on-site support, and monitoring parent education activities.

Additional project personnel included a teacher trainer (40% time) who designed and implemented training workshops, provided ongoing support for mainstream site teachers, and developed curriculum and teacher materials development. An audiologist, (20% time) implemented early screening, identification and assessment, and provided ongoing evaluation of participating children. A psychologist (40% time) assessed children and provided psychological support to children and parents.

Dr. Betty Gittman, an administrator of the Nassau BOCES Office of Institutional Planning and Research, was the program evaluator who designed and implemented evaluation activities, developed assessment instruments, and prepared evaluation reports.

Project CHIME staff and administrative meetings were conducted to discuss various aspects of project implementation including product planning, task assignment, setting deadlines, monitoring implementation, reviewing the budget, reviewing products, preparing reports, and establishing and implementing evaluation procedures. Year 3 meeting dates were: Dec. 9 and 19, Jan. 5 and 29, Feb. 9, 19, and 25, Mar. 20, Apr. 2 and 30, and June 6.

3. Advisory Council

An Advisory Council, created for Project CHIME, consisted of 14 members who provided the project with input, advisement, and support. The members of the Advisory Council were:

- William Clark, Executive Administrator for Special Education, Nassau BOCES
- Diane D'Amato, Parent of a hearing impaired child
- James Elliott, Project CHIME Coordinator
- Mary Kasindorf, Director, CLASP (Children's Living After-School Program)
- Rebecca Kooper, Project CHIME Audiologist, Chief Audiologist for Nassau BOCES Program for the Hearing Impaired
- Marsha Langbart, Director, Merrick Woods Country Day School
- Susan Martello, Assistant Principal, Nassau BOCES Program for the Hearing Impaired
- Maureen Metakes, Assistant Coordinator for Special Education, Nassau BOCES, Project CHIME Director
- Chris Radziewicz, Speech & Hearing Department Adelphi University
- Edwin Schmierer, Psychologist
- Nora Stalter, Project CHIME Teacher Trainer, Preschool Teacher, Nassau BOCES Program for the Hearing Impaired

D. Project Results

1. Evaluation Plan

Evaluation procedures included a process evaluation and a summative evaluation. The process evaluation determined if project activities were implemented as planned and if the objectives had been achieved as evidenced by progress at the participating sites and completion of all project objectives. The summative evaluation was designed to assess the impact of the model on the teachers, parents, and children who participated in the program.

An evaluation plan was developed to guide evaluation activities. It consisted of specific evaluation questions for each objective, identified data to be collected, indicated persons responsible for specific evaluation activities and a due date for completion of activities, and summarized data analysis (Figure 2).

FIGURE 2

Evaluation Plan

Evaluation Questions	Data to be Collected	Person Responsible	Due Date	Analysis
Objective 1				
1.1 Have hearing impaired children who participated in the project for specific lengths of time improved in their communication and social interaction skills?	1.1 Children's verbal and nonverbal interactions with teachers and peers will be assessed by the Pupil Observation Schedule.	Project staff and teachers at mainstream sites.	Fall 85 Spring 86 Spring 87 Spring 88	Baseline data of student performance will be obtained prior to mainstreaming and will be compared to data after 12 and 24 months using one way analyses of variance.
1.2 Have hearing impaired children who participated in the project for specific lengths of time increased their ability to function and learn in a group setting?	1.2 School behavior and self-help skills will be rated with a project developed Behavior Check list.	Project staff and teachers at mainstream sites.	Spring 85 Spring 86 Spring 87	Same as above
1.3 Have hearing impaired children who participated in the project for specific lengths of time evidenced significant growth in social/emotional, cognitive, self-help and language areas?	1.3 Behavioral ratings of social adjustment, self-image and emotional adjustment will be obtained with the Meadow/Kendall Social-Emotional Assessment Inventory for Deaf Students, Gallaudet College, 1980. 1.3 Expressive and receptive language skills will be assessed with the SKI HI Language Development Scale and the assessment of Children's Language Comprehension. 1.3 Cognitive skills will be measured by the Learning Accomplishment Profile, the McCarthy Scales of Children's Abilities, and the (Beery) Developmental Test of Visual Motor Integration. 1.3 Overall student progress will be validated by the use, summary and update of the youngster's IEP.	Project staff and teachers at mainstream sites.	Spring 85 Spring 86 Spring 87	Same as above

...continued

Evaluation Questions	Data to be Collected	Person Responsible	Due Date	Analysis
Objective 2				
2.1 Has a project curriculum and supplementary teacher materials which would adapt existing strategies and methodology for hearing impaired children been developed?	Project curriculum Supplementary teacher materials	Project staff and teachers at mainstream sites.	2nd year	2.1 A specialist in curriculum development and teaching of the hearing impaired will critique materials for their relevance to the teaching of hearing impaired children.
2.2 Have these aforementioned materials been field-tested in four mainstreamed sites?	Field testing documentation	Project staff and teachers	2nd year	2.2 Teachers at the mainstreamed sites will critique materials for their effective utilization.
Objective 3				
3.1 Do staff who are trained demonstrate awareness of the needs of hearing impaired pre-school children and of methodologies for teaching them in a mainstreamed setting?	3.1 Pre- and post-staff observations by specialists in the field of teaching the hearing impaired will be administered prior and after training in the first project year.	Project coordinator	Spring 85 Spring 86 Spring 87	Descriptions of pre-post observations will be conducted by specialists and clinicians in the field in order to ascertain the growth of teachers in the following areas: awareness of the needs of the hearing impaired pre-school child and of teaching methodologies for these youngsters; ability to identify potential hearing problems; and ability to implement adapted pre-school curriculum materials. Where appropriate, correlated t tests will be performed on quantifiable data.
3.2 Do staff who are trained demonstrate the ability to identify potential hearing problems?	3.2 Pre- and post-staff observations will be conducted by clinicians in the field prior and after training in the first project year.	Project coordinator	Spring 86	
3.3 Do staff who are trained demonstrate the ability to implement adapted pre-school curriculum materials?	3.3 Teacher observation visit ratings will be conducted by specialists in the field two times during the first year.	Project coordinator	Spring 86	
Objective 4				
4.1 Do participating parents demonstrate increased awareness of the needs of hearing impaired children?	Responses to pre- and post-questionnaires focused upon parent awareness and expectations of their child administered prior to and after training.	Project staff and evaluators	Spring 85 Spring 86 Spring 87	Correlated t tests of results from the pre- and post-questionnaires will be conducted to determine whether there was a significant growth in parent awareness and expectations.
4.2 Do participating parents, after participation in the project, show more positive attitudes and expectations of their child and his or her potential for achievement?	Parent attitude ratings	Project staff and evaluators	Spring 85 Spring 86 Spring 87	t tests of pre and post measures.
Objective 5				
5. Has a comprehensive screening and monitoring system for infants and children in day care and nursery school settings been put in place in order to achieve early identification of potential hearing problems, and to provide appropriate assessment, referral and follow-up for hearing impaired youngsters by the end of year one of the project's implementation?	1. Project records which will indicate screening of all children in participating mainstream pre-school and day care sites. 2. Project records which will indicate identification, assessment and referral of children and will also include: background, emographic and comprehensive assessment data on each youngster.	Project coordinator	Fall 85 Fall 86 Fall 87	Descriptive statistics/frequency counts on those children screened, identified, assessed and referred on an annual basis. Individual Comprehensive Student profiles and case studies will also be developed and updated annually. The profiles will contain all background information (sex, severity of hearing impairment, age at entry into program), health and family-related information, and scores from all tests administered to the youngsters during the course of the program. Case studies will contain anecdotal information on the student's background, progress in the program and at home, and specific interventions made both at home and at school.
Objective 6				
6. Have project curriculum materials, teacher training program and project strategies for mainstreaming hearing impaired children been disseminated on a local, statewide and national basis by the end of the three-year project period?	Distribution lists of sites receiving materials.	Project coordinator	Spring 87 Fall 87	Descriptive statistics.

2. Model demonstration

The project established a model demonstration program involving neighborhood nursery schools and day care centers to provide preschool hearing impaired children, ages 2-5, with mainstreamed learning experiences in a variety of integrated settings.

It was expected that children with hearing impairments who participated in the project would benefit through increased positive social interaction with non-handicapped peers and increased ability to function and learn in a group setting, thereby evidencing growth in social/emotional, cognitive, self-help and language areas.

2.1 Social interaction

The project hypothesized that preschool children with hearing impairments who participated in the project would benefit through increased positive social interaction with non-handicapped peers in mainstreamed settings as evidenced by teacher and project staff observation. The Worksheet for Hearing Impaired Preschool Interaction (WHIPI) guided observation of peer interactions, teacher interactions, and play behavior of the seven project participants.

During Year 3, thirty-six observations were conducted between Sept. 1986 and March 1987 at the mainstreaming sites. Four-fifths of the observations were conducted by a BOCES teacher who specialized in hearing-impairments; the remainder were conducted by the Project Coordinator. Four-fifths of the observations were conducted during the afternoon; one-fifth was conducted during the morning. The time period for observation was variable, observation ranged between 35-90 minutes, with a mean observation period of 54 minutes and a standard deviation of 18 minutes.

Children were observed participating in a variety of classroom activities. Approximately one-half of the observations were conducted as children were involved in table games. One-fourth of the observations were conducted while children participated in either free play or arts and crafts. One-seventh of the observations were conducted as children participated in either instructional activities, circle time, snack/lunch, or attendance. Other activities which were observed included calendar, weather, music, dismissal, gym, and storytime (Appendix A, Table A.1).

Table 1 displays the values for categories of observation on scales of the Worksheet for Hearing Impaired Preschool Interaction (WHIPI). The scales for categories of observation on the WHIPI scales were: positive peer interaction; negative peer interaction; play observation; positive teacher interaction; and negative teacher interaction. Children were observed experiencing more positive than negative peer interactions; numerous play observations were recorded; and children were observed experiencing more positive than negative teacher interactions.

Table 1

Worksheet for Hearing Impaired Preschool Interaction (WHIPI)

Values	Peer interaction positive	Peer interaction negative	Play observation	Teacher interaction positive	Teacher interaction negative
0-4	9%	88%	3%	12%	95%
5-9	31	12	92	37	6
10-14	37	-	6	50	-
15-19	19	-	-	-	-
20-24	3	-	-	4	-
25-29	3	-	-	-	-
Total	99%	100%	98%	99%	95%

Table A.2 presents, for each interaction, the percentage that it was evidenced in the total observations for that interaction. (Thus, a percentage of 97% would indicate that a particular interaction was observed in 97% of the observations). Positive interactions which were observed most frequently were:

- onlooker (97%)
- moves toward and stands or sits near peer (95%)
- reacts warmly to teacher (94%)
- laughs or smiles with peer (94%)
- parallel play (92%)
- student is attentive to teacher (92%)
- responds appropriately to teacher reinforcement (92%)
- appropriate simple play (92%)
- appropriate play (92%)

Interactions which were observed least frequently, or not at all, were:

- interrupts peer's play (10%)
- tries to interact, but not accepted by peers (6%)
- denies misbehavior (6%)
- requests teacher assistance inappropriately (3%)
- interrupts peer's conversation (3%)
- aggressive or hostile non-verbal behavior (3%)
- aggressive or hostile verbal behavior (0)
- fooling around behavior/seeks negative attention (0)
- seeks negative attention (0)
- clings to teacher (0)
- avoids interaction with teacher (0)

Certain behaviors which all the children were observed evidencing (Table A.3) included:

- initiates non-verbal interaction with peer
- follows lead of peer
- follows (but modifies) lead of peer
- laughs or smiles with peer
- shares with peer
- reacts appropriately to classmates questions
- solitary independent play (plays alone)
- onlooker (watches other children play)

- onlooker (watches other children play)
- parallel play (plays independently beside other children)
- appropriate simple play
- appropriate play (constructive use of objects)
- student is attentive to teacher
- follows directions
- requests assistance from teacher appropriately
- accepts rules
- completes work
- responds appropriately to teacher reinforcement
- reacts warmly to teacher

2.2 Ability to function and learn in a group setting

The Preschool Behavior Checklist (PBC) was developed during Year 1 of the project using q-sort methodology. The checklist consisted of 59 items related to self-help and to school behaviors. Self-help items included dressing, eating, and personal hygiene; school behaviors included adjustment to classroom situation, and social and play skills.

Comparisons of PBC pretest-posttest data for Year 1 were reported in the Year 1 evaluation report. Year 1 participants scored significantly higher on 19 of the 59 items of the Preschool Behavior Checklists after participation in Project CHIME. In view of the large pre- post-test differences on this measure by Year 1 children, and the similarity of the Year 1 and Year 2 groups (based on various other pretests), the decision was made to not administer the PBC in Year 2. As expected, there were no differences between Year 1 and Year 2 PBC posttest scores.

Comparisons of pretest-posttest PBC scores for Year 3 children indicated that Year 3 participants scored significantly higher on 13 of the 59 items of the PBC after participating in Project CHIME (Appendix C, Table C.1).

Differences in the Year 1, Year 2, and Year 3 PBC mean posttest scores were evidenced on specific behaviors. Year 1 youngsters showed lesser evidence than Year 2 or Year 3 participants of ability to wipe one's nose, to use doorknob, to pour from a pitcher, and to use a pencil and crayon independently. Year 2 youngsters showed greater evidence than Year 1 and Year 3 participants of ability to remove pullover sweater, put on a coat, place coat on a hook, clean food area after snack, say "please," "thank you" and I'm sorry" appropriately; and lesser evidence than Year 1 and Year 3 participants in ability to zip and unzip clothing (non-separating zipper), to share toys, take turns, and comfort playmates in distress. Year 3 youngsters showed greater evidence than Year 1 and Year 2 youngsters of participation in role playing activities and asking permission to use possessions of others; and lesser evidence than than Year 1 and Year 2 youngsters in ability to snap and unsnap clothing, utilize expressive communication skills spontaneously with peers and with adults. Despite differences between the groups, it appears that participation in Project CHIME enhanced the ability of participants to function and learn in a group setting.

Table 2

Preschool Behavior Checklist Posttests

Item	Year 1	Year 2	Year 3	Total
Removes coat	3.9	3.2	3.7	3.7
Asks to go to the bathroom	4.0	3.8	3.6	3.8
Puts on coat*	3.5	3.0	3.9	3.5
Places coat on hook*	3.3	3.2	3.6	3.4
Wipes nose*	2.1	3.2	3.0	2.7
Turns faucet on and off	3.5	n/a	3.7	3.6
Opens door using knob*	3.4	3.8	3.9	3.7
Pours liquid using pitcher*	3.6	4.0	4.0	3.8
Unties shoes	2.6	2.2	2.8	2.6
Removes pullover sweater*	2.4	3.6	2.4	2.7
Snaps and unsnaps clothing*	3.4	3.8	2.0	3.2
Goes to the bathroom independently	4.0	4.0	3.6	3.9
Washes and dries hands	4.0	4.0	4.0	4.0
Throws paper towel away independently	4.0	4.0	4.0	4.0
Uses pencil and crayon appropriately*	3.3	4.0	4.0	3.7
Zips and unzips clothing				
a) nonseparating zipper*	3.8	1.0	2.8	2.8
b) separating zipper	0.3	0.8	n/a	
Demonstrates independent feeding skills	3.8	4.0	3.7	3.9
Buckles and unbuckles belt	2.5	3.0	2.8	2.7
Buckles front buttons	2.9	3.0	2.4	2.8
Puts shoes on correct feet	1.6	3.0	2.9	2.4
Uses eating utensils correctly	3.6	3.8	3.9	3.8
Washes and dries face	3.9	n/a	3.7	3.8
Wipes and blows nose without reminder	2.0	2.0	2.3	2.1
Opens own milk carton	2.5	2.3	1.5	2.2
Attempts to tie shoe laces	1.6	2.4	2.5	2.1
Ties shoe laces	0.8	0.0	0.0	0.4
Cleans up spills without reminder	2.4	2.8	2.4	2.5
Cleans food area following snack*	2.0	3.0	2.3	2.3
Ties hood strings	0.1	1.0	0.0	0.2
Engages in parallel play	4.0	3.6	3.6	3.8
Initiates own activity	2.9	4.0	3.4	3.4
Participates in simple games	3.4	3.0	3.6	3.4
Cleans up after play with supervision*	2.1	2.4	2.9	2.5
Is able to share toys*	2.6	2.0	3.1	2.7
Is able to take turns*	2.6	2.0	3.1	2.7
Changes activity without emotional outburst when required	3.0	2.8	3.6	3.2
Sits for more than 5 minutes in structured activities	3.8	3.2	3.9	3.7
Attends to speaker during story-telling activity	3.4	3.4	3.6	3.5
Expresses displeasure appropriately	2.4	3.4	3.6	3.5
Follows rules in group games	3.1	3.0	3.8	3.3
Separates from parent willingly	3.6	3.6	3.3	3.5
Engages in cooperative play	2.8	2.2	3.4	2.8
Asks for assistance when appropriate	3.9	3.8	3.7	3.8
Cuts with scissors	3.9	3.6	3.4	3.7
Calms down after high activity level	2.5	2.8	3.1	2.8
Participates in role-playing activities (playing house)*	3.6	3.4	4.0	3.7
Says "Hello" and "Goodbye" appropriately	3.8	3.8	3.6	3.7
Says "Please," "Thank you" and "I'm sorry" appropriately*	2.8	3.8	3.0	3.1
Demonstrates willingness to try new activities	2.8	3.2	2.9	2.9
Demonstrates pride in work	3.5	3.8	3.9	3.7
Asks permission to use possessions of others*	2.3	2.2	2.6	2.4
Comforts playmates in distress*	2.6	1.8	2.9	2.5
Copes with problems and new situations appropriately	2.5	2.6	3.3	2.8
Follows through on adult instructions	2.9	3.2	3.3	3.1
Completes tasks with assistance	3.9	3.8	4.0	3.9
Persists in difficult task	1.5	1.1	3.0	2.4
Utilizes expressive communition skills spontaneously: a. with peers*	3.9	3.6	3.4	3.7
b. with adults*	3.9	3.6	3.4	3.7
Oral communication efforts are understood: a. by peers	2.9	3.4	3.6	3.3
b. by teachers	3.6	3.8	3.7	3.7
Cleans up on own initiative	1.9	2.4	2.7	2.3
	n=8	n=5	n=7	n=20

*p≤.05

Note. Scores indicate percentage of time that behavior is displayed: 0=0%, 1=25%, 2=50%, 3=75%, 4=100%

2.3 Growth in social/emotional, cognitive, self-help and language areas

Growth in social/emotional, cognitive, self-help and language areas was assessed through administration of the:

- McCarthy Scales of Children's Abilities
- Meadow-Kendall Social Emotional Assessment Inventory
- Beery Developmental Test of Visual Motor Integration
- Learning Accomplishment Profile
- Test for Auditory Comprehension of Language
- Ski-Hi Language Development Scale

a. Children's Abilities

T-test analysis of the McCarthy Scales of Children's Abilities found no differences between pretest scores for Year 1, Year 2, and Year 3 participants, providing evidence that the groups were drawn from the same population (Appendix A, Table A.2).

b. Social Emotional Assessment Inventory

The Meadow-Kendall Social Emotional Assessment Inventory for Deaf Students consisted of five scales which measured social, communicative behaviors; impulsive, dominating behaviors; developmental lags; anxious, compulsive behaviors; and special items related to deafness.

Year 1, Year 2, and Year 3 pretests were compared; no significant differences were found between the groups on any of the five scales, providing further evidence that the samples were drawn from the same population (Appendix A, Table A.3).

Year 1 participants exhibited significant increase in percentile scores on two scales of the Meadow-Kendall, indicating a lesser incidence of impulsive dominating behaviors and a decrease in developmental lags after participation in the project. Year 2 participants exhibited no change on Meadow-Kendall pretest-posttest scores. Year 3 participants exhibited change identical to Year 1 participants, i.e., lesser incidence of impulsive dominating behaviors and a decrease in developmental lags after participation in the project (Appendix C, Table C.2).

Comparison of Year 1, Year 2, and Year 3 posttests found evidence of significant differences in Year 3 participants who demonstrated lesser evidence of impulsive, dominating behaviors and also of anxious, compulsive behaviors than Year 1 or Year 2 participants (Table 3).

Table 3

Meadow-Kendall Posttests

	Year 1	Year 2	Year 3	Total
Social communicative behaviors	55.0	68.0	50.5	57.8
Impulsive, dominating behaviors*	40.0	56.0	17.3	47.3
Developmental lags	78.0	74.0	45.0	66.5
Anxious, compulsive behaviors*	20.0	30.0	6.3	36.8
Special items related to deafness	65.0	70.0	75.0	70.0
	n=8	n=5	n=4	

*sig. at p .05

c. Visual Motor Integration

Comparison of pretest scores on the Beery Developmental Test of Visual Motor Integration for Year 1, Year 2 and Year 3 indicated no significant differences between groups on pretest administrations providing further evidence that the samples were drawn from the same population (Appendix A, Table A.4).

Neither Year 1 nor Year 2 participants exhibited differences in pretest-posttest scores on the Beery Test of Visual Motor Integration. Analysis of Year 3 pretest-posttest scores indicates that Year 3 youngsters exhibited no difference between test administrations (Appendix C, Table C.3).

Comparison of Year 1, Year 2, and Year 3 posttests evidenced no significant differences (Table 4).

Table 4

Beery Developmental Test of Visual Motor Integration Posttests

	Year 1	Year 2	Year 3	Total
Raw Score	7.13	7.00	7.0	7.1
Age Equivalent*	56.75	49.00	47.7	52.6
Percentile	46.13	59.40	34.7	48.1
	n=8	n=5	n=4	

d. Auditory Comprehension of Language

The Test for Auditory Comprehension of Language (TAC) measured auditory comprehension of word classes and relations, grammatical morphemes, and elaborated sentence constructions.

Comparison of pretest scores on the Test for Auditory Comprehension of Language found that Year 1 participants scored lower on two scales of the instrument (Scale 3 and Scale 6) than did Year 2 and Year 3 participants (Appendix A, Table A.5).

Analysis of TAC pretests and posttests for Year 1 participants indicated that scores on Scale 2 improved after participation in Project CHIME. For Year 2 participants, scores on Scales 2 and 3 of the TAC improved after participation in the project. Comparison of the TAC Year 3 pretests and posttests found that scores on Scales 7 and 8 improved after participation in the project.

Comparison of TAC posttest scores found that Year 1 participants scored lower on two scales of the instrument (Scale 3 and Scale 6) than did Year 2 and Year 3 participants (Table 5).

Table 5

Test for Auditory Comprehension Posttests

Scale	Year 1	Year 2	Year 3	Total
1	54.0	55.0	53.5	54.2
2	50.5	63.0	57	58.8
3*	46.0	67.3	61.3	62.2
4	54.0	66.3	66.3	63.4
5	51.7	74.0	66.3	65
6*	49.4	75.5	64.0	61.9
7	53.7	79.5	58.7	62.7
8	50.3	63.7	58.0	57.25
9	42.0	00.0	00.0	00.0
10	50.0	00.0	00.0	00.0
	n=8	n=5		

*sig. at .05

C. Language Development

Comparison of pretest scores on the Ski-HI Language Development Scale for Year 1, Year 2, and Year 3 participants found no differences between the groups providing further evidence that the samples were drawn from the same population (Appendix A, Table A.6).

Comparisons of Year 1 pretest-posttest scores on the Ski-HI found that Year 1 participants improved in their abilities to process statements with one critical element and with four critical elements. Neither Year 2 nor Year 3 participants showed significant differences between Ski-HI pretests and posttests (Appendix C, Table C.7).

Comparisons of posttest scores on the Ski-Hi Language Development Scale of Year 1, Year 2, and Year 3 participants found no differences (Table 6).

Table 6

Ski-Hi Language Development Scale Posttests

Scale	Year 1	Year 2	Year 3	Total
A (1 critical element)	92.5	98.0	89.0	92.9
B (2 critical element)	100.0	100.0	86.7	95.8
C (3 critical element)	82.5	92.0	92.0	87.8
D (4 critical element)	73.8	92.0	78.0	80.0
	n=8	n=5	n=5	

3. Curriculum Materials

A major focus of Year 1 activity was clarification of the purposes of the curriculum and also of the audiences for whom it was intended. The purpose of the curriculum, it was decided, would be to serve as a guide in order that preschool teachers may learn to modify specific, hands-on activities so that they would meet the needs of hearing impaired preschool-age children. The curriculum would be addressed to three types of teacher audiences: regular preschool teachers, special education teachers, and teachers who specialized in education of the hearing impaired. Also in Year 1, the structure, format, and organization of the material was determined.

In Year 2, Project CHIME adapted preschool curriculum materials for use with hearing impaired children mainstreamed into nursery schools and day care centers. The project curriculum and supplementary teacher materials adapted existing strategies and methodology for hearing impaired children. After substantial field-testing at the mainstream sites, eleven copies of the curriculum, teacher's manual, and supplementary teacher materials relating to a model unit on family members were sent to preschool sites outside of the Nassau area. Through field testing, the project obtained comments and criticisms which were incorporated into further development of curriculum materials.

In Year 3, intensive work was directed to the development of curriculum materials to be used for children who have hearing impairments and who are participating in a mainstreamed preschool program. The curriculum consists of eight units divided into two volumes of 250-300 pages each. One volume consists of units on (1) body parts, (2) the five senses, (3) community helpers, and (4) family members. A second volume consists of units on (1) inside the home, (2) outside the home, (3) nursery rhymes and fairy tales, and (4) colors and shapes.

Units are separated into days' activities, with five activities suggested for each day over a 125-day period. The activities are designed to present cognitive concepts and language to hearing impaired children in lesson form. Daily lesson activities include recommendations for cognitive, language (expressive and

receptive), auditory, gross-motor, and fine motor approaches. The curriculum materials prepare teachers in regard to presentation of activities, articulates the purpose for each activity, and includes complete directions. The curriculum materials include, also, pages for reproduction by the classroom teachers which can be used as worksheets or patterns.

4. Staff training

Staff training was a key component for implementing programs at the mainstreaming sites. The project developed and implemented a training program for staff in participating nursery schools and day care centers. It was expected that trained staff would demonstrate awareness of the needs of hearing impaired preschool children and of methodologies for teaching them in a mainstreamed setting; ability to identify potential hearing problems; and ability to implement adapted preschool curriculum materials.

Initial resistance by individual teachers at the sites in regard to the use of auditory trainers was attributed to the additional burdens imposed upon them by the need for twice weekly training sessions and for nightly recharging of auditory trainers. After one month of training, teachers' attitudes became more positive as they started to see beneficial results.

4.1 Teachers' Assessment of Workshops

Thirteen teachers evaluated the workshop program in which they participated: three in Year 1, four in Year 2, and six in Year 3. Analysis of the responses indicated that teachers were satisifed or very satisfied with assessed aspects of the workshops, and that there were no significant differences between responses of Year 1, Year 2 and Year 3 teachers with the exception that Year 2 teachers found the workshops to be "more interesting and involving" than Year 1 and Year 3 teachers (Table 7).

Table 7

Teachers' Ratings of Workshops

	Year 1	Year 2	Year 3	Total
Overall satisfaction	3.7	4.0	4.0	3.9
Relevant content	3.3	3.5	4.0	3.7
Comprehensiveness of content	3.7	3.8	3.7	3.7
Appropriate training methodologies	3.7	3.3	3.5	3.5
Instructors' knowledge and expertise	4.0	4.0	4.0	4.0
Adequate feedback	3.7	3.3	4.0	3.7
Responsive to participants	4.0	4.0	4.0	4.0
Relevant examples and demonstrations	4.0	3.5	4.0	3.8
Interesting and involving*	3.7	3.2	4.0	3.7
Appropriate pacing of material	3.0	3.3	3.8	3.5
	n=3	n=4	n=6	

Note: Based on a scale ranging from 4 (very satisfied to 1 (very dissatisfied).

4.2 Teachers' Assessments of Visits

Thirteen teachers evaluated the on-site visits program: three in Year 1, four in Year 2 and six in Year 3. Analysis of the responses indicated that teachers were satisifed or very satisfied with assessed aspects of the visits, and that there were no significant differences between responses of Year 1, Year 2 and Year 3 teachers (Table 8).

Table 8

Teachers' Ratings of Visits

	Year 1	Year 2	Year 3	Total
Overall satisfaction	3.7	4.0	4.0	3.9
Relevant to needs	3.7	4.0	4.0	3.9
Comprehensive content	3.7	3.8	3.8	3.8
Appropriate training methods	3.3	3.5	3.5	3.5
Adequate variety of training materials	3.0	3.3	3.3	3.2
Continuity of modules and activities	3.3	3.0	3.0	3.1
Knowledge and expertise of instructor	3.7	4.0	4.0	3.9
Familiarity with on-the-job problems	3.7	3.8	4.0	3.9
Adequate feedback	3.7	3.5	4.0	3.8
Logistics/Scheduling of sessions	3.7	3.3	3.2	3.3
	n=3	n=4	n=6	n=13

Note. Based on a scale ranging from 4 (very satisfied) to 1 (very dissatisfied).

Positive teacher assessments of visits and of workshops were indicative of successful implementation of the project. Teachers cooperated with project implementation requirements. One mainstream site teacher redirected her educational goals towards the attainment of a masters degree in education of the hearing impaired.

5. Parent Education Program

Parents of the project participants were cooperative and involved, highly interested in the daily activities of their children. Parents were concerned that their youngsters would adjust well within the mainstreamed experience. The project staff was amenable to parent concerns and provided support as needed, formally and informally. Relationships between project staff and parents of project participants were developed and maintained through telephone conversations and personal formal and informal meetings.

The project provided an extensive parent education program for parents of hearing impaired and nonhandicapped participants. It was expected that participating parents would demonstrate increased awareness of the needs of hearing impaired children and also that they would show more positive attitudes towards and

expectations for their child and his/her potential for achievement.

5.1 Parents' Assessments of Workshops

Parents attended orientation sessions which focused upon the effect of hearing loss, the needs of hearing impaired children, and the goals of mainstreaming. Monthly parent education classes included information about the project's aims and objectives, the parent's role in project activities, reinforcement activities to use at home, the needs of mainstreamed children, and feedback on the project's progress.

Parents attended a minimum of five workshops. Specific dates and topics of eight parent workshops which were scheduled over 1986-1987 were:

- Oct. 22 - Audiological Issues: Audiograms, Auditory Trainers, Cochlear Implants
- Nov. 19 - Considerations in Mainstreaming
- Dec. 17 - Language Stimulation at Home
- Jan. 14 - Language Expansion
- Feb. 11 - Early Elementary Academic Skills
- Mar. 18 - Methodological Differences in Working With the Hearing Impaired
- Apr. 22 - Toys, Books, and Educational Materials
- May 20 - What Lies Ahead?

Twenty-four parents evaluated the parent workshop program on selected criteria: nine in Year 1; eight in Year 2; and seven in Year 3.

The mean ratings indicated that parents were satisfied with each of the assessed criteria. They were particularly satisfied with the knowledge and expertise of the instructors. Analysis of variance found that Year 2 and Year 3 parents rated "satisfaction overall" and "content relevant to needs" higher than did Year 1 parents. Year 3 parents rated "appropriateness of pacing of material" higher than did Year 1 and Year 2 parents (Table 9).

Table 9

Parents' Assessments of Workshops

Criteria	Year 1	2	3	Grand Mean
Overall satisfaction	3.6	4.0	4.0	3.8*
Relevant content	3.4	4.0	4.0	3.8*
Comprehensive content	3.3	3.8	3.7	3.6
Appropriate training methodologies	3.5	3.3	3.3	3.4
Instructors' knowledge and expertise	4.0	4.0	4.0	4.0
Adequate feedback	3.7	3.3	3.7	3.5
Responsive to participants	3.9	3.6	4.0	3.8
Relevant examples and demonstrations	3.9	3.4	3.7	3.7
Interesting and involving	3.7	3.5	4.0	3.7
Appropriate pacing of material	3.3	3.2	3.9	3.5*
	n=9	n=8	n=7	n=24

* sig. at $p \leq .05$

Note. Based on a scale ranging from 4 (very satisfied) to 1 (very dissatisfied).

5.2 Parent Attitudes

Comparison of the pretest attitude data for Year 1, Year 2, and Year 3 parents found that Year 3 parents expressed opinions which differed from Year 1 and Year 2 parents as follows: they believed more strongly that mainstreaming will enhance their children's development in speech; they were less "nervous" that parents of hearing children would not support the mainstreaming concept, and they agreed to a lesser extent with the statement that a partially mainstreamed program will most effectively meet their children's needs (Appendix A, Table A.7). These more relaxed attitudes on the part of Year 3 parents may be attributed to the fact that by Year 3, Project CHIME was known to be successful in providing mainstreaming experiences for the youngsters.

Comparisons of parents' attitude pretests and posttests for Year 1 and Year 2 were reported in the Year 1 and Year 2 evaluation reports. Comparison of Year 3 parents' attitudes found that Year 3 parents became less "nervous about" people understanding their child's speech, about their child's hearing aid malfunctioning, and about their child's participation in language-based activities. Parents also came to believe that their children's current special needs will be most effectively met in either a totally mainstreamed program or partially mainstreamed program, and not in a totally hearing impaired program (Appendix C, Table C.8).

Comparison of Year 1, Year 2, and Year 3 parents' attitudes found that Year 2 parents agreed more than Year 1 or Year 3 parents with the statements "I am nervous about other people understanding my child's speech" and "I am nervous about my child's hearing and malfunctioning" (Table 10).

Table 10

Parents' Attitude Questionnaire Posttests

Statement	Year 2	Year 3	Total
My child will benefit from mainstreaming	4.8	5.0	4.9
Mainstreaming will enhance my child's development in language			
° communication	5.0	5.0	5.0
° socialization	4.8	4.9	4.8
° speech	5.0	5.0	5.0
° cognitive development	3.7	4.1	3.9
° self-help skills	3.6	4.0	3.8
° emotional growth	4.3	4.6	4.4
My child feels comfortable with			
° hearing impaired peers	4.9	5.0	4.9
° hearing peers	4.6	5.0	4.8
I am nervous about			
° people understanding my child's speech*	3.3	1.9	2.6
° my child's hearing and malfunctioning*	1.9	1.0	1.5
° my child's participation in language-based activities	2.6	1.7	2.2
° hearing children interacting with my child	2.5	1.9	2.2
° parents of hearing children supporting the mainstreaming concept*	1.8	1.1	1.5
My child's current special needs will be most effectively met in a			
° totally mainstreamed program	3.9	4.4	4.1
° partially mainstreamed program	3.3	4.6	4.0
° totally hearing impaired program	2.0	1.3	1.6
I expect my child to eventually be fully mainstreamed	4.5	4.3	4.4
Mainstreaming is done to please parents	1.1	1.4	1.3
Special education is detrimental to a hearing impaired child's education	1.8	1.1	1.5
	n=7	n=7	N=14

* sig. at p_5.

Note. Based on a scale ranging from 5 (strongly agree) to 1 (strongly disagree).

6. Screening and Monitoring

Project CHIME provided comprehensive screening and monitoring for infants and children in day care and nursery school settings in order to achieve early identification of potential hearing problems and to provide appropriate referral. Screenings were conducted in a total of 54 participating mainstream preschool and day care sites: 848 children in 18 sites in Year 1, 645 children in 18 sites in Year 2, and 703 children in 18 sites in Year 3. One hundred sixty-eight children were referred for further testing in Year 3. Figure E identifies Year 3 screening sites.

Figure 3. Preschool Screenings, 1986-1987: Assessment and referral of preschool youngsters with possible hearing impairment

10/21/86	Rosa Lee Young Childhood Center	56 tested
	Rockville Center	18 referred
10/28/86	Jewish Community Center of	22 tested
	West Hempstead	10 referred
11/18/86	Dilly Dally Nursery School	30 tested
	Massapequa	12 referred
11/25/86	Old Westbury Hebrew Congregation	28 tested
	Old Westbury	5 referred
12/02/86	Bethpage Cooperative Nursery	59 tested
	Bethpage	8 referred
12/09/86	East Woods School	38 tested
	Oyster Bay Cove	2 referred
1/13/87	Christ Church Nursery	23 tested
	Oyster Bay	6 referred
1/27/87	St. John's Nursery School	48 tested
	Valley Stream	14 referred
2/05/87	Creative Nursery	51 tested
	Rockville Centre	17 referred
2/24/87	Hebrew Academy of Nassau County	32 tested
	West Hempstead	4 referred
3/05/87	Anne Frank Montessori	58 tested
	Rockville Center	12 referred
3/10/87	St. Paul's Nursery School	67 tested
	Glen Cove	10 referred
4/07/87	Dorothy K. Robin Child Care	52 tested
	Center, Hempstead	8 referred
4/28/87	St. Patrick's School	20 tested
	Glen Cove	2 referred
5/05/87	Yeshiva of South Shore	52 tested
	Hewlett	16 referred
5/19/87	St. Boniface School	24 tested
	Elmont	7 referred
6/02/87	Oceanside Creative Nursery	24 tested
	Oceanside	11 referred
6/09/87	Advent Nursery School	19 tested
	Westbury	6 referred
Totals	18 sites	703 Tested
		168 Referred

7. Dissemination

The project disseminated, on a local, statewide and national basis the curriculum materials, teacher training program, and project strategies for mainstreaming preschool hearing impaired children.

The project was described in Connections a monthly newsletter published by Nassau BOCES and distributed to:

- 15 members of BOCES Board of Education
- 56 school district Board of Education Presidents
- 350 Board of Education members in the local school districts
- 56 Superintendents of Schools in Nassau County
- 41 Superintendents of BOCES in New York State
- 258 central office administrators in Nassau County
- 6 SEPTAs (Special Education Parent Teacher Association)
- 261 PTA Presidents
- 1800 BOCES employees
- 55 editors of community newspapers in Nassau County
- 304 principals of Elementary and Secondary Schools
- 295 Nassau County classroom teachers taking courses through BOCES curriculum courses though staff development programming
- 60 Nassau County School public relations officials
- 450 guidance counselors in Nassau County
- 100 parents of students with handicaps participating in Special Education Training & Resource Center (SETRC) workshops

The Nassau BOCES Special Education Information Officer sent a letter to directors of 187 HCEEP projects (including 24 outreach projects, 55 state plan grant projects, 4 early childhood research institutes, and 2 technical assistant agencies) informing them of the availability of an executive summary for Project CHIME and of curriculum and of a replication guide which were developed by the project. It is anticipated that a number of the projects which were contacted will request the available materials.

F. Summary and Conclusions

Project CHIME developed and implemented strategies to promote effective mainstreaming of preschool hearing impaired children ages 2-5. The project developed a program providing mainstreamed learning experiences for hearing impaired preschool children in a variety of integrated settings. These mainstreamed preschool experiences were used as a transition training environment to enhance readiness for mainstreaming into regular kindergarten.

Over the three years of the project 20 preschool hearing impaired youngsters were served at one of the mainstream sites. The children attended a mainstream site up to three mornings per week; they attended the BOCES Hearing Impaired Preschool Program the remainder of each week. Baseline data collected on a variety of characteristics (including behavior, ability, social-emotional

adjustment, visual motor integration, auditory language comprehension, and language development) indicated that there were no baseline differences between the 4-year old youngsters who were served during each year of the project implementation.

Assessment of the program participants indicated that gains were made in terms of their social interactions, their ability to function and learn in a group setting, social-emotional adjustment, auditory language comprehension, and (in the case of Year 1 participants) language development. There were no gains in the children's visual motor integration.

Project CHIME developed and field tested a comprehensive curriculum and supplementary teacher materials for use with hearing impaired children mainstreamed into nursery school settings. The 550-page curriculum consists of eight units (body parts, the five senses, community helpers, family members, inside the home, outside the home, nursery rhymes and fairy tales, and colors and shapes). Cognitive, expressive and receptive language, auditory, gross-motor, and fine motor approaches were incorporated into daily lessons presented over a 125-day period to present concepts and language to hearing impaired children.

Staff development was conducted for 13 teachers. Staff development was critical, particularly at the outset of the project when teachers resisted some of the extra tasks which were required of them, i.e., recharging the auditory trainers. Once it was demonstrated that the project truly was beneficial to the children, the teachers became more cooperative. Assessment found that teachers believed their workshop experiences to be very satisfactory, and also the on-site visits of project staff.

Parent education consisted of an orientation session and monthly classes. Assessment of the parent education component found that parents were very satisfied with their classes. All the parents had positive attitudes regarding the needs of hearing impaired youngsters and towards the project. Attitudes of Year 3 parents were somewhat more positive regarding the needs of hearing impaired youngsters and towards the project, possibly because the project was already demonstrated to be successful.

The comprehensive screening and monitoring which Project CHIME provided to children in day care and nursery school mainstream settings was effective in achieving early identification of potential hearing problems. A total of 54 mainstream preschool and day care sites participated in the screening and monitoring program at a rate of 18 sites a year. Eight hundred forty-eight children were evaluated in Year 1; 645 children in Year 2; and 703 children in Year 3. Approximately one-fifth of the youngsters were referred for further evaluation. Aside from the immediate value which the screening and monitoring program held for the youngsters, it alerts us to the alarming news that 20% of children tested at mainstream sites have possible hearing disturbances which may have tremendous impact upon children and their ability to learn. The screening and monitoring program was

valuable, also, as a networking technique and a dissemination vehicle.

- Dissemination of the curriculum materials, the teacher training program, and project strategies for mainstreaming preschool hearing impaired children was conducted locally, statewide, and nationally.

APPENDIX A

BASELINE DATA

Appendix A

Baseline Data

Table A.1

Preschool Behavior Checklist Pretests

Item	Year 1	Year 2	Total
Removes coat	3.4	3.0	3.2
Asks to go to the bathroom	4.0	3.6	3.9
Puts on coat*	2.6	3.2	2.9
Places coat on hook*	1.6	2.7	2.1
Wipes nose	2.4	2.0	2.2
Turns faucet on and off	2.5	3.0	2.7
Opens door using knob*	2.3	3.5	2.8
Pours liquid using pitcher*	3.0	3.5	3.2
Unties shoes	1.0	1.8	1.4
Removes pullover sweater*	0.7	2.3	1.5
Snaps and unsnaps clothing	0.8	2.0	1.2
Goes to the bathroom independently	3.5	3.8	3.6
Washes and dries hands	3.8	3.4	3.6
Throws paper towel away independently	3.8	3.3	3.6
Uses pencil and crayon appropriately	2.9	3.5	3.1
Zips and unzips clothing			
a) nonseparating zipper	2.5	1.3	2.1
b) separating zipper	0.3	0.8	---
Demonstrates independent feeding skills	3.8	3.7	3.7
Buckles and unbuckles belt	1.2	1.0	1.1
Buckles front buttons	1.4	1.2	1.3
Puts shoes on correct feet	0.3	1.0	0.5
Uses eating utensils correctly*	3.9	2.6	3.4
Washes and dries face	3.4	1.0	3.1
Wipes and blows nose without reminder	1.5	2.0	1.6
Opens own milk carton	0.0	1.0	0.8
Attempts to tie shoe laces	1.4	1.0	1.2
Ties shoe laces	0.0	0.0	0.0
Cleans up spills without reminder	2.3	2.3	2.3
Cleans food area following snack	2.3	2.0	2.2
Ties hood strings	0.1	0.0	0.8
Engages in parellel play	3.3	3.5	3.4
Initiates own activity	3.2	3.3	3.2
Participates in simple games	3.1	2.3	2.8
Cleans up after play with supervision	2.3	1.8	2.1
Is able to share toys	1.8	2.2	1.9
Is able to take turns	2.0	2.0	2.0
Changes activity without emotional outburst when required	2.6	2.8	2.7
Sits for more than 5 minutes in structured activities	3.3	3.5	3.4
Attends to speaker during story-telling activity	2.8	2.8	2.8
Expresses displeasure appropriately	2.1	2.7	2.4
Follows rules in group games	2.4	2.4	2.4
Separates from parent willingly	3.1	2.8	3.0
Engages in cooperative play	2.0	2.8	2.3
Asks for assistance when appropriate	3.4	3.2	3.3
Cuts with scissors	2.8	3.8	3.1
Calms down after high activity level	2.8	2.8	2.8
Participates in role-playing activities (playing house)*	2.5	3.0	2.7
Says "Hello" and "Goodbye" appropriately	1.3	3.7	2.3
Says "Please," "Thank you" and "I'm sorry" appropriately*	1.3	3.3	2.1
Demonstrates willingness to try new activities	2.8	2.3	2.6
Demonstrates pride in work	3.3	3.2	3.2
Asks permission to use possessions of others*	1.1	1.7	1.3
Comforts playmates in distress*	1.0	1.5	1.2
Copes with problems and new situations appropriately	1.6	2.0	1.8
Follows through on adult instructions	2.8	2.2	2.5
Completes tasks with assistance	3.6	3.3	3.5
Persists in difficult task	1.5	2.0	1.7
Utilizes expressive communition skills spontaneously: a. with peers*	3.1	3.3	3.2
b. with adults*	3.3	3.6	3.3
Oral communication efforts are understood: a. by peers	3.5	3.0	3.3
b. by teachers	3.5	3.2	3.4
Cleans up on own initiative	1.5	2.0	1.7
	n=8	n=6	n=14

*$p \leq .05$

Note. Scores indicate percentage of time that behavior is displayed: 0=0%, 1=25%, 2=50%, 3=75%, 4=100%

Table A.2

McCarthy Scales of Children's Abilities Pretests

	Year 1	Year 2	Year 3	Total
Perceptual performance raw score	32.9	34.8	33.0	33.4
Perceptual performance percentile score	52.5	69.0	50.4	56.5
Scale Index	50.3	55.4	47.0	51.9
Subtest Scores				
Block building	5.6	4.4	5.6	5.3
Puzzle solving	2.6	3.2	3.6	3.1
Tapping sequence	4.0	3.2	2.8	3.4
Draw-a-design	4.3	5.6	3.8	4.5
Draw-a-child	5.9	3.6	4.6	4.9
Conceptual grouping	5.7	6.8	4.6	5.7
	n= 8	n= 5	n= 4	n= 17

Table A.3

Meadow-Kendall Social Emotional Assessment Inventory Pretests

	Year 1	Year 2	Year 3	Total
Social communicative behaviors	47.1	32.0	42.5	41.6
Impulsive, dominating behaviors	35.6	40.0	20.0	33.2
Developmental lags	54.5	78.0	42.5	60.4
Anxious, compulsive behaviors	44.4	20.0	20.5	31.6
Special items related to deafness	58.0	65.0	71.0	63.1
	n=8	n=5	n=4	

Table A.4

Beery Developmental Test of Visual Motor Integration Pretests

	Year 1	Year 2	Year 3	Total
Raw Score	5.88	6.40	4.7	5.8
Age Equivalent	52.75	54.40	40.0	50.9
Percentile	52.13	69.60	0.0	58.9
	n=8	n=5	n=4	

Table A.5

Test for Auditory Comprehension of Language Pretests

Scale	Year 1	2	3	Total
1	44.0	53.5	53.3	51.5
2	43.5	53.8	55.0	52.2
3*	35.5	54.8	59.3	52.7
4	30.5	57.8	61.3	54.2
5	42.5	54.5	58.7	53.8
6*	43.3	58.7	60.0	49.6
7	51.5	52.0	00.0	51.6
8	45.7	00.0	00.0	00.0
9	42.5	00.0	00.0	00.0
10	00.0	00.0	00.0	00.0

*sig.at .05

Table A.6

Ski-Hi Language Development Scale Pretests

Scale	Year 1	2	3	Total
A (1 critical element)	88.1	93.8	88.8	88.0
B (2 critical elements)	96.2	100.0	100.0	98.3
C (3 critical elements)	77.5	70.0	88.0	83.9
D (4 critical elements)	53.7	70.0	68.0	62.2

Table A.7

Parents' Attitude Questionnaire Pretests

Statement	Year 1	2	3
My child will benefit from mainstreaming	4.4	4.6	4.8
Mainstreaming will enhance my child's development in language			
° communication	4.1	4.7	4.8
° socialization	4.3	4.7	4.8
° speech	4.1	3.9	4.8*
° cognitive development	4.2	4.4	3.8
° self-help skills	4.1	4.4	3.7
° emotional growth	4.0	4.3	4.2
My child feels comfortable with			
° hearing impaired peers	4.6	4.9	5.0
° hearing peers	4.7	4.3	4.4
I am nervous about			
° people understanding my child's speech	3.6	2.7	3.8
° my child's hearing and malfunctioning	3.0	2.7	1.9
° my child's participation in language-based activities	3.5	2.7	3.6
° hearing children interacting with my child	2.1	3.1	1.7
° parents of hearing children supporting the mainstreaming concept	2.7	2.6	1.2
My child's current special needs will be most effectively met in a			
° totally mainstreamed program	2.8	(n<2)	3.0
° partially mainstreamed program*	4.2	4.3	3.9
° totally hearing impaired program	3.0	(n<2)	4.7
I expect my child to eventually be fully mainstreamed	4.2	4.6	3.7
Mainstreaming is done to please parents	2.3	1.9	1.6
Special education is detrimental to a hearing impaired child's education*	3.2	3.0	1.2
	n=15	n=7	n=11

* sig. diff of main effects at $p \leq 5$.

Note. Based on a scale ranging from 5 (strongly agree) to 1 (strongly disagree).

APPENDIX B

WORKSHEET FOR HEARING IMPAIRED
PRESCHOOL INTERACTION

Appendix B

Worksheet for Hearing Impaired Preschool Interaction (WHIPI)

Table B.1

Observed Activities - WHIPI Scale

Activity	Percentage
table games	.54
free play	.15
arts and crafts	.10
instruction	.06
circle time	.03
snack/lunch	.03
attendance	.03
calendar	.01
weather	.01
music	.01
dismissal	.01
gym	.01
storytime	.01

Table B.2

Percentage of Observation for WHIPI Items

Items	Percentage of observation
Onlooker (watches other children play)	97%
Moves toward and stands or sits near peer	95
Reacts warmly to teacher	94
Laughs or smiles with peer	94
Appropriate simple play (exploration, shows interest)	92
Appropriate play (constructive use of objects)	92
Responds appropriately to teacher reinforcement	92
Parallel play	92
Student is attentive to teacher	92
Works independently with teacher guidance	89
Accepts rules	89
Initiates interaction with teacher	86
Solitary independent play (plays alone)	86
Completes work	83
Follows (but modifies) lead of peer	80
Follows directions	80
Initiates conversation	78
Seeks information from peer	78
Requests assistance from teacher appropriately	78
Initiates non-verbal interaction with peer (gestures)	77
Reacts appropriately to classmates questions	75
Calls to peer	72
Appropriate play	69
Follows lead of peer	67
Shares with peer	61
Shows pride in product to peer	61
Unoccupied play behavior (watching, self-stimulatory	61
Associate play (plays with other children)	61
Adapts well to routine changes in classroom	58
Refuses to follow peer's directions	55
Touches peer	55
Forgets/does not follow directions	47
Displays appropriate sense of humor with teacher	42
Cooperative play (organized play with common goal)	39
Easily distracted	39
Offers help or expresses concern toward peer	36
Tattles or complains about others	36
Leads peer activity	33
Expresses physical affection toward peer	33
Bossy, takes over	30
Has difficulty changing activities	28
Ignores other children	28
Seeks help with equipment or clothing from peer	20
Inappropriate play (repetitive or nonconstructive)	20
Takes toys/materials belonging to others	20
Not attentive to teacher	19
Easily frustrated with peers	17
Fails to demonstrate sense of humor	17
Competes for adult attention	14
Expresses frustration to teacher inappropriately	11
Interrupts peer's play	10
Interacts with others only when encouraged by adult	10
Denies misbehavior	6
Tries to interact, but not accepted by peers	6
Other	5
Aggressive (or hostile) non-verbal behavior	3
Requests teacher assistance inappropriately	3
Interrupts peer's conversation	3
Aggressive (or hostile) verbal behavior	0
Fooling around behavior/seeks negative attention	0
Seeks negative attention	0
Clings to teacher	0
Avoids interaction with teacher	0

Table B.3

Number of Children Observed at Specific Activities - WHIPI

Items	Number of children
Initiates non-verbal interaction with peer	7
Follows lead of peer	7
Follows (but modifies) lead of peer	7
Reacts appropriately to classmates questions	7
Laughs or smiles with peer	7
Shares with peer	7
Appropriate simple play (shows interest)	7
Appropriate play (constructive use of objects)	7
Solitary independent play (plays alone)	7
Onlooker (watches other children play)	7
Parallel play (plays beside other children)	7
Student is attentive to teacher	7
Follows directions	7
Requests assistance from teacher appropriately	7
Accepts rules	7
Completes work	7
Responds appropriately to teacher reinforcement	7
Reacts warmly to teacher	7
Adapts well to routine changes in classroom	6
Initiates interaction with teacher	6
Appropriate play (includes higher level pretend play)	6
Displays appropriate sense of humor with teacher	6
Works independently with teacher guidance	6
Unoccupied play behavior (watching, self-stimulatory; toys are not the focus)	6
Associate play (plays with other children)	6
Cooperative play (organized play with common goal	6
Offers help or expresses concern toward peer	6
Shows pride in product to peer	6
Refuses to follow peer's directions	6
Touches peer	6
Calls to peer	6
Initiates conversation	6
Seeks information from peer	6
Seeks help with equipment or clothing from peer	5
Moves toward and stands or sits near peer	5
Leads peer activity	5
Ignores other children	5
Takes toys/materials belonging to others	4
Tattles or complains about others	4
Bossy, takes over	4
Expresses physical affection toward peer	4
Easily distracted	4
Interrupts peer's play	3
Competes for adult attention	3
Easily frustrated with peers	3
Interacts with others only when encouraged by adult	3
Inappropriate play (repetitive or nonconstructive)	3
Forgets/does not follow directions	3
Has difficulty changing activities	3
Fails to demonstrate sense of humor	2
Not attentive to teacher	2
Denies misbehavior	2
Expresses frustration to teacher inappropriately	2
Tries to interact, but not accepted by peers	2
Other	2
Interrupts peer's conversation	1
Other	1
Requests teacher assistance inappropriately	1
Aggressive (or hostile) non-verbal behavior	1
Aggressive (or hostile) verbal behavior	0
Fooling around behavior/seeks negative attention	0
Seeks negative attention	0
Clings to teacher	0
Avoids interaction with teacher	0

Comments appended to the Worksheet for Hearing Impaired Preschool Interaction (WHIPI)

Child 1

Oct. 86 She is still very nervous about going to school and is reluctant and hesitant about going outside after lunch. She complains that she is sick and sits on the lawn and refuses to move. Once the fight has been won and she is over there, Miss M claims she is fine and plays with the girls. When I stay, she sulks and sits near me, and refuses to interact with anyone. Observing through the 2-way mirror, I see that she does follow the routine using cues from her peers.

Nov. 86 She is adjusting to Miss R and the change in routine that a new aide has initiated. It is hard for Miss R to get adjusted to everyone, especially this child who pretends to know and understand everything that is said. We discussed this point. Miss R said she could try to be more aware of this, especially when giving directions.

Dec. 86 She did not know that I was watching through the two-way mirror. She was upset because her friend went home early, and she was alone at school. She joined in with the other girls who were making wrapping paper, and she giggled and laughed with them. Miss R had put the rabbit in a box and the child was watching it with all the other children. She was not wearing her trainer.

Jan. 87 We initiated the trainer today once again since we forgot how to use it over the vacation. We gathered the children around us, and I treated the trainer as a surprise box. All of the children were extremely receptive and could not wait to see what was inside. Both project participants were excited and whispered to their friends about what was in the box. All of the children wanted to listen and try the trainer. Both project participants put their trainers on and gave Miss R the microphone. During play time, (Child 1) played with the girls in the kitchen and her friend played with the trucks and the boys.

Feb. 87 She put her trainer on without complaints, and she sat next to another child during table play and interacted with him. During lesson time/attendance, she clung near me on the outside of the circle. She picked up her visual cues from the children and speechread part of what Miss R was saying. She would not go up to the blackboard and write the number 10 or put a block into the circle. (I don't think that she followed what was going on so she was afraid of making a mistake) She participated in counting the numbers exercise program, and she found the hidden e's in the alphabet pages.

March 87 She was angry with me today because it was another child's birthday, and she was having a tough time because he was first. She came in and sulked on the piano bench. (A classmate) went over and tried to comfort her by initiating a game of putting her head down and then picking it up and making a funny face. This made her laugh for a few minutes. The classmate became bored and walked away. She continued to sulk.

Miss R asked her to come over to the table and to color with the other children. She didn't converse with the kids but colored her Leprechaun silently. Miss R asked her to get some scissors which she did. They were lefty ones, so Miss R asked her to get a pair with a red top. She shook her head yes and sat back down. I told Miss R that she didn't understand, and she just "yessed" her again. Miss R called her over and explained that she had the wrong scissors.

During playtime, two children wrote letters on the chalkboard and made a tall building with the blocks. She joined them.

Child 2

Sept. 86 He sat eating his snack with his peers. Someone tried to take his chair, but (Child 2) told him to find another seat and it was resolved. While outside, he drifted from monkey bars to house, slide, tunnel, and talking to us. There was no interaction between him and his peers. As soon as a large group of children came to the piece of equipment he was on, he left.

Both the coordinator and teacher expressed the following concerns;

(a) extremely short attention span
(b) constantly saying "what?" and not following directions
(c) drifting from one activity to another
(d) difficulty maintaining eye contact

All teachers expressed an interest in suggesting ways to help him.

Oct. 86 The teachers were short-handed today, so all the children remained inside and the aide did the song and the beginning lesson. The noise level was high which made it difficult for him to follow the song and pay attention to the teacher doing the lesson. The teacher worked with a small group cutting a pumpkin. He did sit while she cut the pumpkin, and he did initiate conversation with her and ask her questions. He tried to interact with 3 of the boys who were building a tower. They wouldn't let him play, so he went off to a corner by himself.

Dec. 86 When I arrived, the trainer was on him correctly set. He was reading a book by himself. During the playtime, he wandered between the playdough table and the people and the cars. He played by himself alongside the boys and did talk to them when they came close. During snack, he ate quietly at the table.

Jan. 87 He was sitting with a group of eight children for the first activity. Miss M put his trainer on and started to do the daily routine; calendar, alphabet letter and numbers, what is happening in this picture?, and days of the week song. He answered two of the questions correctly, but the noise level was loud and he kept looking around to see what was happening. He participated in the song and dance, and he yelled out the correct numbers and letters. He had no interest in the what's happening? picture, therefore he wasn't paying attention.

During playtime, he seemed more comfortable and moved from playing with snow to the playdough and then the airport. He did not play with anyone specifically, but he did play parallel to them. He did answer one girl's questions.

Feb. 87 He was participating in group exercises when I arrived. Even though his trainer was on a little loose, he held it while jumping and followed the exercises. He sat for storytime in the back of the group and focused on Miss S while she read the book. Several of the boys were very disruptive, so it was difficult for him to concentrate. He answered the question, "How do you help your Mommy and Daddy?" , but we didn't understand the response which dealt with a large truck of Daddy's. He also answered that they all help each other clean up.

At playtime, he played with the airport and plane set pretending that the people were going on a trip and then going back home. He carried out every detail of the trip such as loading the plane, checking the different parts, putting in gas, etc. A little boy made a road for the plane to follow and played with him for a little while. We also looked in as a group of four girls were admiring each other's (Garbage Pail Kids) cards.

When I arrived the teacher was not wearing the mike. She had forgotten. We found part of the tubing to the child's hearing aid on the floor.

March 87 He was painting when I arrived. He was using two hands interchangeably and a whole-fisted grip with his left hand. He painted the entire paper with horizontal and vertical lines. After he was finished, he washed his hands with another child the sink. He looked around and went over to the computer and put a few letters into it. He watched the rougher crew of boys in the fort and then he went to join them. They became a bit rough and the teacher removed them. He went over to the puzzles and took them apart but he couldn't put them together again. He walked away and started playing at the kitchen area. He did not clean up. At snack time he sat down and ate his crackers quietly. He did not want to make an Easter Bunny, and he wasn't forced to.

Child 3

Oct. 86 He was enthusiastic to see me and introduced me to everyone in the class. Several of the children remembered me from last year and ran to say hello and include me in their play. The teacher was warm and accommodating. I explained about the auditory trainer, his hearing loss and the difficulties he may encounter. She agreed to send her books, etc. so I could preview them .The teacher also requested a tape so that she can record some of the songs .

During outdoor play, he cooperatively played with many groups of children. The trainer will be introduced on 10-16-86 at 11:45 in a group lesson.

Week of 10/21/86 - 10/23/86 The trainer lesson was well received by the class. He put it on with no hesitation, and all the children loved talking into the microphone from outside of the room. After the trainer was introduced, he played with everyone, and no comments or attention was paid to the trainer. He gave me a tape of all the songs for this month. The teacher also gave me three songs to work on. No comments were made as to his performance, except that he confused the routine. Tom called on 10-27-86 concerned with negative comments made by the teacher about negative behavior: not following the routine and causing other children not to follow the routine. A routine was set up with the teacher.
Nov. 86 He put his trainer on by himself and immediately entered the group. He sat down and cut all of the apples for applesauce, and then moved to the playdough table where he interacted with all the children at the table. He then went to play with the boys in the dress up/kitchen corner. He followed the routine with no problems.

Comments (overheard) "Can we get the aide a trainer?"

The topics for the month were songs ... and family/Thanksgiving.

Dec. 86 He participated in all songs except the one that required spinning. (It could have been his partner, he picked one boy but the boy said no, or it was the fact that he didn't want to keep his back to the teacher). He laughed at the mixed-up story with the funny words: latkes/lockets; but I'm not sure that he understood some of the vocabulary, such as lockets.

During playtime, he built a house with the waffle blocks and played with the people. At dismissal, he followed the routine and put his papers away.

The teacher reported that the trainer was not working last week. She thought that since she was absent it wasn't charged correctly. I tested the trainer and it was working fine.

Jan. 87 He was excited to see me. We checked the trainer and noticed that the wire on the microphone was broken. I took the trainer back and put a new wire on the teacher transmitter. The teacher, took a new tape for music and will return it tomorrow. She noted no problems except with phonics (what begins with M?).

He played with everyone and followed directions given by his peers. He followed them and also led activities. The teacher also gave her usual comment that the room was noisy because he was there, and they were talking "loudly" for him to hear better. I saw no evidence of this.

March 87 He was following the teacher's directions to make a Purim Hat. He answered her questions correctly and made a beautiful hat. He then went into the block area and played with several of the boys. Together they made a large building and put the people inside. They called it a castle and were quite proud of their project.

The teacher gave me three songs to work with (him) on: 5 little Chickadees, Princess and the Prince, The Farmer. She gave me a Purim tape to use for concepts also.

We discussed the fact that he doesn't want to wear his trainer in music when they jump and also outside. We agreed that if the teacher could remove the trainer and have the time to put on his aid, it was O.K.

Child 4

Oct. 86 Today there were five children present in the classroom: Usually, there are 8 children and 2 teachers. When I came into the classroom, (Child 4) was seated at the table with three other children, painting. The two other children were playing at the water table. She found a bear and clung onto it watching my every move and watching all the others. She began to move around to each of the children watching what they were doing. She did take possession over some toys and wouldn't give them up, toys such as the bear, dog, cow, rabbit. To get the teacher's attention she half-whined/cried, but the teacher handled it appropriately by asking her to talk. Spontaneously during her play, she used one or two word utterances to communicate: "My rabbit." "Cow moo."

When the teacher couldn't understand her, she asked her to say it again. She understood (her) almost 100%. The teacher's vocal quality is pleasant to listen to and she uses a varied pitch range. She is vocabulary oriented, and when she talks to the children, she uses "here and now" instead of the abstract she pointed to the clock and said, "Wait"!. The teacher faced (Child 4) when she spoke to her. The songs that they were singing were simple and repetitious.

Red, yellow, green, and brown
All the leaves are falling down.

Suggestions given to mom in our conversation (10/9/86 11:35-11:50):
1. Sing songs with the child at home. Use songs that she learns in nursery school.
2. Make oaktag figures of the children in her class.

Nov.86 She is one of eight children in the class with a teacher and an aide. She recognized me and came over to me when I walked in. During the arts and craft activity, she sat next to me while

she played with clay and cookie cutters. She named each of the animal shapes and told me to "push," "open," and "clean-up." Her responses were usually one word, but she did attempt two words and short phrases: "Put it in the pail; "two bears;" "Here's the rabbit." She did not vocalize with the other students, but she shared cookie cutters with them. She was able to follow simple directions and used her hearing to the best of her ability.

Dec. 86 She was absent, and Mom did not call. The teacher reports that the child is "doing fantastic," is speaking in one to three word utterances, and is picking up vocabulary quickly.

Jan. 87 She was involved in an arts and crafts activity when I arrived. She was working at a table with three children, pasting white objects on a piece of red paper. After she was finished, she went over to the toys and started playing with a cash register. She couldn't find the plastic money so she yelled, "Where money? I want more money." When she found another coin, she said, "Here it is, more money." She wandered to the water table and washed a few brushes in the water. Another girl asked her a question, so she nodded her head and walked away. She noticed the "dirty table" and washed it for the teacher. She also said: "No clean up now" and "Wash it, wash it." The teacher was excellent at asking the children "wh" questions and labeling everything they were using.

As the teacher was asking the children about their pictures, she constantly repeated the vocabulary "white" and brought in lots of visual, tactile white objects. (Child 4) noticed that her white sweatshirt had paint on it and said, "Mommy wash it." Teacher noted that she doesn't like to get dirty. She also said: "Want a turn" and "My book."

Sharing is still a problem but expressive language is now one to three word phrases and some sentences.

Feb. 87 She came in with her white teddy bear and went over to the Arts and Crafts table to watch the other children make snowmen. While she was waiting her turn, she painted two pictures and played by the water table. While she was making her snowman, the teacher asked her, "What is this?" and "Where do you put the hat?" She answered 100%.

While playing by the water table and with the playdough, she used the phrase, "I want playdough." Also, "My pot. My playdough."

March 87 She was painting when I arrived with a group of four children. She was deep in concentration and it was the first time her temper was exhilarated. It was time to clean up and she was very upset, but the teacher distracted her and maneuvered her) to the water table. She also got upset when her shirt got wet and the teacher made her roll up her shirt.

At play time, she played alongside her friend by the water table and then by herself in the sand box. She sat next to her friend while everyone was reading a book and commented on the story. She also started naming the pictures in the storytime book, and she moved so she could see the book and the teacher better.

She initiated a conversation with me. Although I couldn't follow the whole conversation, some of her utterances were: "My mommy wash it home." "My home." "Baby wash." "I have Mickey Mouse." "He no have Mickey Mouse." "He has sheep." "It pinch me."

Child 5

Sept. 86 He put his book bag and things away in the correct cubby. He sat down with his friend to do table toys. He tried to share ; he spoke with her and gave her some of his toys to make a house.

He had difficulty attending during storytime. He sat on the line circle, but faced opposite the teacher until he was turned around to look at the calendar. He did not count or repeat the days of the week. He did say "Here" when his name was called. He played by himself with the big cars. When Miss Mary called him, he went over to the table and sat down. He picked up the fact that he had to cut out things that were blue. He cut one picture out by himself and then asked for help.

Oct. 86 He can't wait to go over to Merrick Woods, and he can't understand why another child is upset about going. He went over to the table and got a toy out to play with. He sat next to the other child and played with her, sharing the different parts and asking her questions. He also became independent and colored with the crayons.

He sat with Miss Mary and made a collage with the objects he collected from their nature walk. He followed her directions and made a beautiful picture. Then he bolted off to play in the block corner.

Nov. 87 He is adjusting well to the change. He is following the routine and is warming up to Miss R. During circle time and attendance, he had difficulty paying attention for the length of both activities. He fidgeted and kept moving his position in the circle. He shifted his focus and frequently looked around the room. He volunteered to put the number on the calendar and mouthed the counting activity. During play time, he played with (Child 7) and the Fisher Price toys. Both children conversed and commented to each other.

Jan. 87 We initiated the trainer today once again since we forgot how to use it over the vacation. We gathered the children around us and I treated the trainer as a surprise box. All of the children were extremely receptive and couldn't wait to see what was inside. Both of the project participants were excited and whispered to their friends what was in the box. All of the children wanted to listen and try the trainer on. Both the project participants put their trainers on and gave Miss R. the microphone.

During play time, (Child 7) played with the girls in the kitchen, and he played with the trucks and the boys.

Feb. 87 He played with his friend during table play and worked on building with the small blocks and links. During circle time, he sat facing Miss R. so he could watch the whole circle and everyone who was speaking. He paid attention while Miss R. was writing the numbers on the chalkboard. He eagerly jumped up when his name was called, and he identified the number and erased it. He shouted out answers and volunteered for everything by raising his hands. He had difficulty following the exercises because Miss R. was talking while exercising, and it was difficult to read her lips. Also, there was background noise.

March 87 He was playing when I arrived today. He quickly walked over to the table with Miss R. and joined in the group that was coloring. He asked the questions: "What is this?" "What are we doing?" and "What's his name?" He also added the comments: "I like this" and "That's good." He asked Miss R. for help when he needed it, and he showed off his leprechaun to everyone.

He played with his friend today, drawing letters on the chalkboard and then building an elaborate building with the blocks. Another child joined them in cooperative play.

Child 6

Dec. 86 The nursery setting was very warm and cozy. (Child 6) seemed comfortable as she moved around the room and interacted with the two teachers. She painted her dreidel and showed the finished one to her teacher. She played with the teacher and a puzzle at the table (sic.). Other children were playing alongside of her, but there was no verbal interaction. She used one-word utterances to communicate with the teachers. She followed directions 100% even with music playing softly in the background.

Jan. 87 She was painting a red boot when I arrived, and she hung it up to dry. While I was sitting down, she wandered from toy to toy playing parallel with the other children. She was very quiet today and only answered on demand. She hid from me.

Both of her teachers are pleased with how verbal she has become (3-4 word utterances) and how caring and good-natured she is with the other children. She was wearing two hearing aids today, and she followed directions 100%. She is also very expressive with her facial movements.

March 87 She was playing with a group of six children in the sandbox when I arrived. I went over and initiated conversation with the group. She was imitating what the others were saying as well as joining in the conversation: "Dis is for me." (sic.) "I'm making playing." (sic.) "Where is the milk?" "I have sand." "This is like Sammy."

While playing with the puzzles she said, "I can't do this" to the teacher. She finished her arts and crafts project, cleaned up, kept her head down during quiet-time, and sat down for circle time ... the usual daily routine. One of the girls pretended she was the teacher and (Child 6) giggled, paid attention, and followed the commands she was giving.

Child 7

Dec. 86 (Child 7) is in a class of eight 8 children with a teacher and an aide. During my observation, she interacted with the other children using one and two words to express herself. She also went up to the teacher to ask for help with her arts and crafts project. The teacher told me that she was doing very well; separation from Mom is no longer a problem.

March 87 She is in a class of eight students with a teacher and aide. During the observation, she painted a picture and then had free play. Her expressive language was mostly one and two words, but she did use some full sentences: "I need a tissue." "I didn't take it." "Look at my picture." During story time she watched the teacher and used one-word sentences to name colors and pictures. She was very happy throughout the observation. The teacher reported that she is doing very well with no problems noticed.

Nov. 18 She is adjusting well. She is following the routine and is warming up to Miss R. During play time, she played with (Child 5) and the Fisher Price toys. Both conversed and commented to each other.

Jan. 8 We initiated the trainer today once again since we forgot how to use it over the vacation. We gathered the children around us and I located the trainer as a surprise box. All of the children were extremely receptive and couldn't wait to see what was inside. Both (Child 5) and (Child 7) were excited and whispered to their friends what was in the box. All of the children wanted to listed and try the trainer on. Both project participants put their trainers on and gave Miss R. the microphone. During play time, she played with the girls in the kitchen and (Child 5) played with the trucks and the boys.

Feb. 3 She played with another child during table play and worked on building with the small blocks and links.

March 17 She played with (Child 5) today drawing letters on the chalkboard and then building an elaborate building with the blocks. Another child joined them in cooperative play.

APPENDIX C

YEAR 3 PRETESTS AND POSTTESTS

Appendix C

Year 3 Pretests and Posttests

Table C.1

Preschool Behavior Checklist. Year 3 Pretest and posttests

Item	Pretest	Posttest	Totals
Removes coat	3.0	3.7	3.4
Asks to go to the bathroom	3.6	3.6	3.6
Puts on coat	3.2	3.9	3.5
Places coat on hook	2.7	3.4	3.1
Wipes nose	2.3	3.0	2.7
Turns faucet on and off	3.0	3.7	3.5
Opens door using knob	3.5	3.9	3.7
Pours liquid using pitcher	3.5	4.0	3.8
Unties shoes	1.8	2.8	2.3
Removes pullover sweater	2.3	2.4	2.4
Snaps and unsnaps clothing	2.0	2.0	2.0
Goes to the bathroom independently	3.8	3.6	3.7
Washes and dries hands	3.4	4.0	3.8
Throws paper towel away independently	3.5	3.9	3.7
Uses pencil and crayon appropriately	3.5	4.0	3.8
Zips and unzips clothing			
a) nonseparating zipper	1.3	2.8	2.1
b) separating zipper	NA	NA	NA
Demonstrates independent feeding skills	3.7	4.0	3.9
Buckles and unbuckles belt	1.0	2.8	1.9
Buckles front buttons	1.2	2.4	1.8
Puts shoes on correct feet	1.0	2.9	2.2
Uses eating utensils correctly*	2.6	3.9	3.3
Washes and dries face*	1.0	3.7	3.4
Wipes and blows nose without reminder	2.0	2.3	2.2
Opens own milk carton	1.0	1.5	1.3
Attempts to tie shoe laces	1.0	2.5	1.8
Ties shoe laces	0.0	0.0	0.0
Cleans up spills without reminder	2.3	2.4	2.4
Cleans food area following snack	2.0	2.3	2.2
Ties hood strings	0.0	0.0	0.0
Engages in parellel play	3.5	3.6	3.5
Initiates own activity	3.3	3.4	3.4
Participates in simple games*	2.3	3.6	3.0
Cleans up after play with supervision	1.8	2.9	2.4
Is able to share toys*	2.2	3.1	2.7
Is able to take turns*	2.0	3.1	2.6
Changes activity without emotional outburst when required	2.8	3.6	3.2
Sits for more than 5 minutes in structured activities	3.5	3.9	3.7
Attends to speaker during story-telling activity	2.8	3.6	3.2
Expresses displeasure appropriately*	2.7	3.4	3.1
Follows rules in group games*	2.4	3.8	3.2
Separates from parent willingly	2.8	3.3	3.1
Engages in cooperative play	2.8	3.4	3.1
Asks for assistance when appropriate	3.2	3.7	3.5
Cuts with scissors	3.8	3.4	3.6
Calms down after high activity level	2.8	3.1	3.0
Participates in role-playing activities (playing house)*	3.0	4.0	3.6
Says "Hello" and "Goodbye" appropriately	3.7	3.6	3.6
Says "Please," "Thank you" and "I'm sorry" appropriately	3.3	3.0	3.2
Demonstrates willingness to try new activities	2.3	2.9	2.6
Demonstrates pride in work	3.2	3.9	3.5
Asks permission to use possessions of others*	1.7	2.6	2.2
Comforts playmates in distress*	1.5	2.9	2.2
Copes with problems and new situations appropriately*	2.0	3.3	2.7
Follows through on adult instructions*	2.2	3.3	2.8
Completes tasks with assistance	3.3	4.0	3.7
Persists in difficult task*	2.0	2.9	2.5
Utilizes expressive communition skills spontaneously: a. with peers	3.3	3.4	3.4
b. with adults	3.3	3.4	3.4
Oral communication efforts are understood: a. by peers	3.0	3.6	3.3
b. by teachers	3.2	3.7	3.5
Cleans up on own initiative	2.0	2.7	2.4
	n=5	n=7	

*p≤.05

Note. Scores indicate percentage of time that behavior is displayed: 0=0%, 1=25%, 2=50%, 3=75%, 4=100%

Table C.2

Meadow-Kendall Socio-Emotional Assessment Inventory, Year 3 Pretests and Posttests

Scale	Pretest	Posttest
Social communicative behaviors	42.1	50.5
Impulsive, dominating behaviors*	20.0	17.3
Developmental lags*	42.5	45.0
Anxious, compulsive behaviors	44.4	56.2
Special items related to deafness	58.0	67.5
	n=4	n=5

*sig. at .05

Table C.3

Beery Developmental Tests of Visual Motor Integration, Year 3 Pretests and Posttests

	Pretest	Posttest
Raw Score	4.7	7.0
Age Equivalent	40.5	53.0
Percentile	69.6	59.4
	n=4	n=5

Table C.4

Learning Accomplishment Profile Year 3 Pretests and Posttests

Scale	Pretest	Posttest
1	53.3	53.5
2	55.0	57.0
3	59.3	61.3
4	61.3	66.3
5	58.7	66.8
6	60.0	64.0
7	00.0	58.7
8	00.0	58.7
9	00.0	00.0
10	00.0	00.0
	n=4	n=5

Table C.5

Year 3 Ski-Hi Language Development, Year 3 Pretests and Posttests

Scale	Pretest	Posttest
A (1 critical element)	88.8	89.0
B (2 critical elements)	100.0	86.7
C (3 critical elements)	90.0	92.0
D (4 critical elements)	68.0	78.0
	n=4	n=5

Table C.6

Parents' Attitude Questionnaire Year 3 Pretests and Posttests

Statement	Pretest	Posttest	Total
My child will benefit from mainstreaming	4.8	5.0	4.9
Mainstreaming will enhance my child's development in language			
• communication	4.8	5.0	4.9
• socialization	4.8	4.8	4.8
• speech	4.8	5.0	4.9
• cognitive development	3.8	4.1	3.9
• self-help skills	3.7	4.0	3.8
• emotional growth	4.2	4.6	4.3
My child feels comfortable with			
• hearing impaired peers	5.0	5.0	5.0
• hearing peers*	4.4	5.0	4.6
I am nervous about			
• people understanding my child's speech*	3.8	1.9	3.1
• my child's hearing and malfunctioning*	1.9	1.0	1.6
• my child's participation in language-based activities*	3.6	1.7	2.9
• hearing children interacting with my child	1.7	1.9	1.8
• parents of hearing children supporting the mainstreaming concept	1.2	1.1	1.2
My child's current special needs will be most effectively met in a			
• totally mainstreamed program*	3.0	4.4	3.6
• partially mainstreamed program*	3.9	4.6	4.2
• totally hearing impaired program*	4.7	1.3	3.4
I expect my child to eventually be fully mainstreamed*	3.7	4.3	3.9
Mainstreaming is done to please parents	1.6	1.4	1.5
Special education is detrimental to a hearing impaired child's education	1.2	1.1	1.1
	n=11	n=7	N=18

* p_.05

Note. Based on a scale ranging from 5 (strongly agree) to 1 (strongly disagree).

Table C.7

Test for Auditory Comprehension of Language Year 3 Pretests and Posttests

Scale	Pretest	Posttest
1	53.3	53.5
2	55.0	57.0
3	59.3	61.3
4	61.3	66.3
5	58.7	66.3
6	60.0	64.0
7*	00.0	58.7
8*	00.0	58.0
9	00.0	00.0
10	00.0	00.0
	n=5	n=5

*sig.at .05

APPENDIX D

CASE STUDIES

Appendix D

Case Studies

Case #1
---- is completing her second year in Project CHIME. She attends the mainstream site two afternoons per week. ---'s entire family is hearing impaired (mother, father, younger brother). The parents communicate with each other by means of total communication using sign language and voice. However, the parents use only voice when communicating with --- and her brother.

---'s first experience with mainstreaming was met with great apprehension on both the child's part as well as her parents. During the first month of mainstreaming, --- did not attempt to speak or interact with the "hearing" children. A conference was held with the parents, teachers, and staff of Project CHIME to discuss possible options or changes. Because of the mother's strong belief in oral communication and the desire to have --- speak better than herself, the decision was made to continue the mainstreaming effort. The bottom line is that --- does not stop talking. Her speech is intelligible, (yes, better than Mom's) and she has more friends than ever before.

--- will enter kindergarten in September. Mainstreaming is planned on a part time basis.

Case #2
---is the first two year old to be mainstreamed in Project CHIME. She attends a parochial nursery school two mornings a week. She is the youngest of three children. The rest of the family has normal hearing.

--- is very outgoing and her speech quality is excellent. The main concern of the parents and the Project CHIME staff was the age factor: is a two year old too young to be mainstreamed? In ---'s case the answer turned out to be negative. At the outset, there was a separation problem from her mother. This problem lasted only a few weeks.

Now --- is no different from any other two year old, except for her hearing impairment. If a stranger visiting ---'s mainstreaming class was asked to identify "the hearing impaired" child, that person would be hard-pressed to do so.

--- will enter the preschool program in September. Mainstreaming is planned for three mornings per week.

Case #3
--- is an intelligent four year old who is currently being mainstreamed two afternoons per week in a public nursery school. He is the oldest of two children of normal hearing parents.

This is ---'s first experience with mainstreaming. Before placement was made, the parents raised concerns regarding socialization skills. Although --- has a moderate hearing loss and his speech is excellent, he has a difficult time socializing with other children and has been somewhat of a "loner". If a child attempts to play with him, he will shy away. He becomes frustrated easily and has bitten himself or hit himself in response to frustration. In previous conferences, parent-teachers have brushed the problem aside.

Recently we have learned that the parents' marriage is shaky. This may have affected ---'s behavior. ---'s withdrawal from the mainstreamed program was considered by project staff. In view of progress in his socialization skills, he will be allowed to complete the year in Project CHIME.

---'s placement for September has not yet been determined.